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EDUCATION.

No. I.—September, 1883.

MORAL EDUCATION IN SCHOOLS.

REPORT OF COMMITTEE ON MORAL EDUCATION TO THE NATIONAL COUNCIL OF EDUCATION.

To the National Council of Education:

Your committee appointed to report on the subject of Moral Education in Schools, beg leave to offer the following reflections and conclusions for your consideration and approval :

1. Your committee agree in the opinion that morality consists in practice rather than in theory, and that accordingly the pupil is to become moral by acquiring correct habits; and that it is not sufficient for him to learn correct doctrines on the subject of virtue and vice. Moral training is a discipline of the will rather than of the intellect. Nevertheless all sound intellectual education is dependent on the moral training of the will, and on the other hand a theoretical insight into the nature of virtue and vice aids very greatly the formation of a solid moral character.

2. Your committee have not been able to facilitate their labor by finding any complete and systematic moral code in the treatises to which they have had access, and, consequently, they have encountered difficulty at every stage of progress both in classifying the several orders of moral virtues and in finding an exhaustive enumeration of the different species. They have found many synonyms for the same vice, duty, or virtue, while on the other hand there seems to be no words in the language which express the general virtues that lie at the basis of some of the subordinate species. With this they have found, besides, a want of exact definition which leaves an uncertain and wavering line not only between the several virtues but also

between the entire province of morality and that of legality, on the one hand, and that of religion, on the other. Obedience to civil statutes, and conformity to religious requirements, may or may not fall into the sphere of moral duties, according to the definition that one adopts for morality. So, likewise, mere mechanical comformity to rule,—dead, unconscious habit,—is easily confounded with moral action because habitual conformity to rule is a general constituent of moral behavior; although the latter should possess in addition to habit, also, deliberate preference (*προαίρεσις*), as Aristotle teaches. Again, there are certain moral virtues which consist in the choice of a middle ground between two extremes,—the excess or deficiency of the same activity. Among such virtues, for example, the Nichomachean ethics enumerates courage (lying between rashness and cowardice), liberality (lying between prodigality and niggardliness), magnanimity (between vaingloriousness and little-mindedness), and several others for which English equivalents are not so easily found. These middle virtues are very apt to be identified, each with one of the extremes. There is a further discrimination between moral virtues and intellectual virtues; that is to say, between those which concern actions that directly relate to other persons and those that concern the acquirement of truth.

3. Your committee would call attention to the prevalence of unusual conditions whose effect is unfavorable to morals, in this country and at this time. Of these there are five influences that deserve especial mention: (1) The conflux of nationalities brought about by migration; (2) the possibilities of rapid acquirement of wealth; (3) the necessity for frequent changes of vocation; (4) local self-government; (5) the growth of science and literature, and the diffusion of knowledge. All parts of Europe and some parts of Asia are sending us their emigrants. Each brings some peculiar moral habits which clash with our own. The result is that each and all, immigrants and natives, have to learn tolerance. But moral punctilios cannot be trifled with safely. When people are politically compelled to be tolerant of petty customs that they believe to be immoral, there follows a relaxation of genuine morality itself. Even when a false, bigoted prejudice that has rooted itself among the moral virtues is pulled up, the cardinal virtues themselves suffer injury. The possibilities of rapid wealth generate excesses of all kinds,—excessive work, excessive indulgences. Besides this, the man who conquers fortune by his own efforts finds himself unprepared for the new responsibilities and temptations that wealth brings. He has conquered so much through industry that he feels that he can conquer the fixed laws of morals.

Again, the diffusion of scientific knowledge among the people weakens the bonds of authority of all kinds and replaces the terror felt for some unknown punishment by a moderate apprehension of some physical inconvenience, the moral command having lost its sanctity and become a hygienic prescription. Besides this, science gets applied in the mechanic arts and an age of invention results. New inventions cause old trades to grow obsolete and a general change of vocations becomes prevalent. The change of vocations throws the laborer from one set of conditions into another for which he is unprepared. Each guild or occupation has its special temptations, and possesses its tradition of the best means to prepare its youth to resist them. The change of vocation brings danger because the laborer takes up a business whose temptations he is not trained to meet and overcome. The spread of local self-government, likewise, adds to this reaction against moral authority. Politics in a democracy is a process in which the arbitrary will and capricious desires of individuals are transmuted into the higher personality and irresistible will of the State. This process affords occasion for the full activity of animal cunning and other brute qualities. The school of politics undermines moral principle, and sets up unscrupulous policy in its place. Doubtless in the course of time sagacious statesmanship will discover the necessary forms and restrictions to prevent political corruption, but much evil must needs be expected before that consummation.

These causes of the weakening of morality in our time and country are causes that cannot be removed and that it is useless to lament. But they ought to be provided for by all forms of education. The school, the family, the Church, the State, should all work in harmony toward this desirable end. No moral result will be equal to the emergency unless it gives inward strength of character, such as will enable the youth to act aright in novel situations and to sustain his integrity under pressure of circumstances. With no prospect of abatement in scientific discovery or its application in the mechanic arts, there will still prevail (1) the rapid product in wealth, (2) the mingling of nationalities by migration, (3) consequent changes of vocation, (4) local self-government, and (5) increasing independence of mere personal authority, and these will continue to offer extraordinary obstacles to the preservation of our ethical customs But such a strength of character as will be required to overcome those obstacles is a much nobler form of moral life than one which is deadened into custom.

4. Your committee distinguish moral duties or habits which ought

to be taught to youth into three classes: (*a*) Mechanical virtues in which the youth exercises a minimum of moral choice and obeys an external rule prescribed for him. In this, the lowest species of moral discipline, the youth learns self-denial and self-control, and not much besides. (*b*) Social duties,—those which govern the relation of man to man, and which are the properly called "moral" duties. In this form of moral discipline the youth learns to obey principle rather than the immediate will of another, or a mechanical prescription. (*c*) Religious duties, or those based on the relation to God as revealed in religion. In these the youth learns the ultimate grounds of obligation, and gains both a practical principle for the conduct of life and a theoretic principle on which to base his view of the world. In his religious doctrine man formulates his theory of the origin and destiny of nature and the human race, and at the same time defines his eternal vocation, his fundamental duties. The mere statement of this obvious fact is sufficient to indicate the rank and importance of the religious part of the moral duties.

5. In the school your committee note, first, the moral effect of the requirement of implicit obedience, a requirement necessary within the school for its successful administration. The discipline in obedience, in its strict form, such as is found in the school-room, has four other applications which remain valid under all conditions of society:

(*a*) Obedience toward parents; (*b*) toward employers, overseers, and supervisors as regards the details of work; (*c*) toward the government in its legally constituted authority, civil or military; (*d*) towards the Divine Will, howsoever revealed. In each of these four forms there is, and always remains, a sphere of greater or less extent within which implicit obedience is one's duty. In the three first-named, this duty is not absolute but limited, the sphere continually growing narrower with the growth of the individual in wisdom and self-directive power. In the fourth form of obedience the individual comes more and more to a personal insight into the necessity of the divine law as revealed in Scripture, in nature, and especially in human life, and he becomes through this emancipated relatively from the direct personal control of men, even of the wisest and best, and becomes rather a law unto himself. He outgrows mere mechanical obedience, and arrives at a truly moral will in which the law is written on the heart.

6. The pillars on which school education rests are behavior and scholarship. Deportment or behavior comes first as the *sine qua non*. The first requisite of the school is order: each pupil must be taught to conform his behavior to the general standard and repress all that interferes with the function of the school. In the outset, therefore, a

whole family of virtues are taught the pupil, and taught him so thoroughly that they become fixed in his character. In the mechanical duties, habit is everything, and theory is little or nothing. The pupil is taught:

(*a*) Punctuality; he must be at school in time. Sleep, business, play, indisposition, all must give way to the duty of obedience to this external requirement to observe the particular moment of time and conform to it. Punctuality does not end with getting to school, but, while in school, it is of equal importance. Combination cannot be achieved without it. The pupil must have his lesson ready at the appointed time, must rise from his seat at the tap of the bell, move to line, return: in short he must go through all the evolutions with observance of rhythm.

(*b*) Regularity is the next discipline. Regularity is punctuality reduced to a system. Conformity to the requirements of time in a particular instance is punctuality; made general, it become regularity. Combination in school rests on these two virtues. They are the most elementary of the moral code,—its alphabet, in short.

This age is often called the age of productive industry,—the era of emancipation of man from the drudgery of slavery to his natural wants of food, clothing, and shelter. This emancipation is effected by machinery. Machinery has quadrupled the efficiency of human industry within the past half-century. There is one general training especially needed to prepare the generations of men who are to act as directors of machinery and managers of the business that depends upon it; this training is in the habits of punctuality and regularity. Only by obedience to these abstract external laws of time and place may we achieve a social combination complete enough to free us from thraldom to our physical wants and necessities.

(*c*) Silence is the third of these semi-mechanical duties. It is the basis for the culture of internality or reflection,—the soil in which thought grows. The pupil is therefore taught habits of silence,—to restrain his natural animal impulse to prate and chatter. All ascent above his animal nature arises through this ability to hold back the mind from utterance of the immediate impulse. The first impression must be corrected by the second. Combination and generalization are required to reach deep and wide truths, and these depend upon this habit of silence.

Thus silence in the school-room has a twofold significance: first, it is necessary in order that there may be no distraction of the attention of others from their work; secondly, it is a direct discipline in the art of combining the diffused and feeble efforts of the pupil himself.

These mechanical duties constitute an elementary training in morals without which it is exceedingly difficult to build any superstructure of moral character whatever. Moral education, therefore, must begin in merely mechanical obedience and develop gradually out of this stage towards individual responsibility.

7. The strictly moral duties fall into two classes,—those that relate to the individual himself and those that relate to his fellows:

(*a*) *Duties to self.* These are,—(1) physical, and concern cleanliness, neatness in person and clothing, total abstinence in some cases, and temperance and moderation in other cases of gratification of the animal appetites and passions.

The school can and does teach cleanliness and neatness, but it has less power over the pupil in regard to temperance. It can teach him self-control and self-sacrifice in the three disciplines already named,—punctuality, regularity, and silence,—and in so doing it may free him from thraldom to the body in other respects. It can and does labor efficiently against obscenity and profanity in language, and thereby impresses on the pupil the moral standard of purity.

(2) Self-culture. This duty belongs especially to the school All of its lessons contribute to the pupil's self-culture. By its discipline it gives him control over himself and ability to combine with his fellow-men ; by its instruction it gives him knowledge of the world of nature and man. This virtue corresponds nearly to the one named Prudence in ancient ethical systems. The Christian theology discusses four cardinal virtues,—Temperance, Prudence, Fortitude, and Justice. Prudence places the individual above and beyond his present moment, as it were, letting him stand over himself watching and directing himself. Man is a twofold being, having a particular special self, and a general nature, his ideal self, the possibility of perfection. Prudence stands for the theoretical or intellectual side of the cardinal or secular virtues.

(3) Industry. This virtue means devotion to one's calling or business. Each one owes it to himself to have some business and to be industrious.

The good school does nor tolerate idleness. It has the most efficient means of securing industry from its pupils. Each one has a definite task scrupulously adjusted to his capacity, and he will be held responsible for its performance. Is there any better training yet devised to educate youth into industry and its concomitants of sincerity, earnestness, perseverance, simplicity, patience, faithfulness, and reliability, than the school method of requiring work in definite amounts at definite times and of an approved quality ? The pupil has provided for him a business or vocation. By industry and self-sacrifice he is initiated into a third of the cardinal virtues,—fortitude.

8. (*b*) *Duties to others.* Duties to self rest on the consciousness of a higher nature in the individual and of the duty of bringing out and realizing this higher nature. Duties to others recognize this higher ideal nature as something general, and hence as also the true inward self of our fellow-men.

This ideal of man we are conscious that we realize only very imperfectly, and yet it is the fact that we have the possibility of it in ourselves that gives us our value above animals and plants. In our fellow-men we see revelations of this ideal nature that we have not yet realized ourselves. Each one possesses some special gift or quality that helps us know ourselves. The experience of each fellow-man is a contribution toward our own self-knowledge, and vicariously aids us without our being obliged to pay for it in the pain and suffering that the original experience cost. Inasmuch as our ideal can be realized only through this aid from our fellow-men, the virtues that enable us to combine with others and form institutions precede in importance the mechanical virtues.

There are three classes of duties toward others: (1) Courtesy,—including all forms of politeness, good-breeding, urbanity, decorum, modesty, respect for public opinion, liberality, magnanimity, etc., described under various names by Aristotle and by others after him. The essence of this virtue consists in the resolution to see in others only the ideal of humanity, and to ignore any and all defects that may exist in their behavior.

Courtesy in many of its forms is readily taught in school. Its teaching is often marred by the manner of the teacher, which may be sour and surly, or petulant and fault-finding. The importance of this virtue both to its possessor and to all his fellows demands a more careful attention on the part of school-managers to secure its presence in the school-room.

(2) *Justice.* This is recognized as the chief in the family of secular virtues. It has several forms or species, as, for example, (*a*) honesty, the fair dealing with others respecting their rights of person, property, and reputation; (*b*) truth-telling or honesty in speech,—honesty itself being truth-acting. Such names as integrity, uprightness, righteousness, express further distinctions that belong to this staunch virtue.

Justice, like courtesy in the fact that it looks upon the ideal of the individual, is unlike courtesy in that it looks upon the deed of the individual in a very strict and business-like way, and measures its defects by the high standard. According to the principle of justice, each one receives in proportion to his deeds, and not in proportion to his possibilities, wishes, or unrealized aspirations. All individuals are ideally equal in the essence of their humanity; but justice will return upon each the equivalent of his deed only. If it be a crime, Justice returns it upon the doer as a limitation of his personal freedom or his property.

The school is more effective in teaching the forms of justice than in teaching those of courtesy. Truth-telling especially receives the full emphasis of all the power of school-discipline. Every lesson is an exercise in digging out and closely defining the truth,—in extending the realm of clearness and certainty further, and in limiting the region of ignorance and guess-work. How careful the pupil is compelled to be with his statements in the recitation and with his previous preparation!

While Justice may discover the exact performance of each pupil and give him recognition for it, on the other hand injustice may easily arise if there is carelessness on the part of the teacher. Such carelessness may suffer the weeds of lying and deceit to grow up, and when the dishonest pupil can gather the fruits of honesty and truth, a premium is offered for fraud. The school may thus furnish an immoral education, notwithstanding its great opportunities to inculcate the noble virtue of honesty.

The private individual must not be permitted to return the evil deed upon the doer, for that would be revenge and hence a new crime. All personality and self-interest must be sifted out before justice can be done to the criminal. Hence we count as a kindred virtue to Justice that of obedience to law.

(3) Respect for law, as the only means of protecting the innocent and punishing the guilty, is the complement of justice. It looks upon the ideal as realized not in an individual man, but in an institution represented in the form of an executive officer who is supported with legislative and judicial powers.

The school, when governed by an arbitrary and tyrannical teacher, is a fearfully demoralizing influence in a community. The law-abiding virtue is weakened, and a whole troop of lesser virtues take their flight and give admittance to passions and appetites. But the teacher may teach respect for law, very thoroughly, on the other hand. In this matter a great change has been wrought in the methods of discipline in later years. Corporal punishment has been very largely disused. It is clear that with frequent and severe corporal punishment it is next to impossible to retain genuine respect for law. Only the very rare teacher can succeed in this. Punishment through the sense of honor has therefore superseded for the most part in our best schools the use of the rod. It is now easy to find the school admirably disciplined and its pupils enthusiastic and law-abiding,—governed entirely without the use of corporal punishment.

The school possesses very great advantages over the family in this matter of teaching respect for law. The parent is too near the child, too personal to teach him this lesson.

9. *Religious duties.* Higher than the properly moral duties, or at least higher than the secular or "cardinal" virtues, are certain ones called "celestial" virtues by the theologians. These are faith, hope, charity, and their special modifications. The question may arise, whether any instruction in these duties can be given which is not at the same time sectarian? An affirmative answer will have to show only that each of these virtues has a secular meaning more fundamental than the so-called cardinal virtues.

(1) Faith in a theologic sense means the true knowledge of the first principle of the universe. Everybody presupposes some theory or view of the world, its origin and destiny, in all his practical and theoretical dealing with it. Christendom assumes a personal Creator of divine-human nature, who admits man to Grace in such a way that he is not destroyed by the results of his essential imperfection, but is redeemed in some special way. The Buddhist and Brahmin thinks that finitude and imperfection are utterly incompatible with the divine being, and hence that the things of the world cannot be permitted to have real existence. They exist only in our fancy. Here is no grace, no redemption. Nature being not a revelation of the Deity, there can be no natural science.

In Christian countries the prevailing institutions and confessions of faith recognize this belief in a divine-human God. Natural science may be said to presuppose this doctrine, inasmuch as it is based on the deep-lying assumption that the world is a manifestation of Reason. This view of the world is very properly called Faith, inasmuch as it is not pieced together from the experience of the senses nor a product of individual reflection unaided by the deep intuitions of the spiritual seers of the race.

Faith is a secular virtue as well as a theological virtue, and whoever teaches another view of the world,—that is to say, he who teaches that man is not immortal and that Nature does not reveal the Divine Reason,—teaches a doctrine subversive of faith in this peculiar sense, and also subversive of man's life in all that makes it worth living.

(2) *Hope.* The second theological virtue is the practical side of

faith. Faith is not properly the belief in some theory of the world, but in *the* particular theory of the world that Christianity teaches. So hope is not a mere anticipation of *some* future event, but the firm expectation that the destiny of the world is in accordance with the scheme of faith, no matter now much any present appearances may be against it. Thus the individual acts upon this conviction. It is the basis of the highest practical doing in this world. A teacher may teach faith and hope in the views of the world which he expresses, and in his dealings with his school, in his teaching of history, in his comments on the reading-lessons, in his treatment of the aspirations of his pupils. Although none of these things may be consciously traced to their source by the pupils, yet their instinct will discover genuine faith and hope whenever it exists. Nothing is so difficult to conceal as one's conviction in regard to the origin and destiny of the world and of man.

(3) Finally, Charity is the highest of these virtues, in the sense that it is the concrete embodiment and application of that view of the world which Faith and Hope establish. The world is made and governed by Divine Grace, and that grace will triumph in the world. Hence, says the individual, "Let me be filled with this principle and hold within myself this divine feeling of grace toward all fellow-creatures." Charity is, therefore, not alms-giving, but a devotion to others: "Sell all thou hast . . . . and follow me." Faith perceives the principle; Hope acts upon it where it is not yet visible; Charity sets it up in the soul and lives it. There might be conceived a faith or insight into this principle of divine grace that should trust it theoretically, and yet its possessor live a life of selfishness. In that case the individual would acknowledge the principle, but would not admit it into himself. With Charity all other virtues are implied,—even justice.

While Courtesy acts toward men as if they were ideally perfect and had no defects; while Justice holds each man responsible for the perfect accordance of his deed with his ideally perfect nature and makes no allowance for immaturity, Charity sees both the ideal perfection and the real imperfection, and does not condemn, but offers to help the other, and is willing and glad to sacrifice itself to assist the imperfect in its struggle toward perfection.

10. The highest virtue, Charity, has, of all the virtues, the largest family of synonyms: humility, considerateness, heroism, gratitude, friendliness, and various shades of love in the family (parental, filial, fraternal, and conjugal), sympathy, pity, benevolence, kindness, toleration, patriotism, generosity, public-spirit, philanthropy,

beneficence, concord, harmony, peacableness, tenderness, forgiveness, mercy, grace, long-suffering, etc. The typical form of this virtue as it may be cultivated in school may be known under the name of kindness. A spirit of true kindness, if it can be made to pervade a school, becomes a fountain of virtues. That such a spirit can exist in a school as the effect of the labors of a teacher, we know from the history of Arnold of Rugby, not to mention other illustrious examples. From the definition of this principle it is easy to deduce a verdict against all those systems of rivalry and emulation in school which stimulate ambition beyond the limits of generous competition and cause it to become selfishness. Selfishness is the root of mortal sin, as theologians tell us, and its most deadly forms are envy and cold, unfeeling pride.

11. In a State which has no established church, and in a system of public schools that is not permitted to be under the control of sects or denominations, what shall be the fate of dogmatic instruction in morals, especially instruction in that part of morals which rests upon the celestial virtues? The problem would seem to be a simple one in parochial schools and denominational schools. But the more strict the denominational control, the less likely is there to pervade the school that spirit of tolerance and charity toward others which is the acknowledged deepest tap-root of the virtues. Were the community homogeneous in its confession of faith, dogmatic religious instruction could still properly remain in the school. The progress of American society is not, however, in that direction, and it is not impossible that the Church may yet see formal religious instruction, even to the ceremony of reading the Bible, leave the common schools altogether. Whenever the reading of the Bible "without note or comment," or the formal prayer on opening school, is merely perfunctory, it is surely not moral instruction, nor even religious instruction, in any efficient sense.

12. For the reason that the State must confine its cognizance to overt acts, and forbear to penetrate the sacred circle of personal conviction lest it violate justice, it has been separated from the Church in our time. Justice returns his deed upon the individual and bids him take its consequences, but it cannot say, "Receive back the consequences of your private, unuttered conviction"; for conviction, opinion, thought, so long as not externalized in deeds, do not belong to the secular world, and cannot be arraigned without a confusion that would destroy the secular world altogether. The State may return only his deed on the doer. What has not yet become a deed but remains only a thought is not uttered, or externalized, and therefore cannot be returned.

Religion, on the contrary, looks at once to the heart, the innermost conviction, and passes by the overt act as something which may be done for the sake of ulterior, selfish reasons. On these grounds the laws of the State have generally the prohibitory form, while the requirements of religion are positive. Morality, like the statute-laws, concerns overt acts, but its prescriptions are generally of a positive character, like those of religion. The distinction between sin and crime marks the essential difference between civil and religious legality. For the purposes of justice, law-breaking must be punished; and before this can be done there must be a measure established. The statute defines this measure, — as nearly as possible it is the equivalent of the deed, or the deed itself symbolically expressed. A sin is regarded as infinite in its nature, and nothing is more fatal to religion than the admission of a measure for sin in the form of a finite penance. Only absolute repentance may be met by an infinite mercy, but there can be no purchase of forgiveness nor atonement by deeds for the act of sin. This is the root of the great difficulty which your committee have encountered in the practical disposition of the many questions that arise in the provinces common to morality and religion, or common to religion and secular statutes. The same deed may be both a sin and a crime, although many deeds that are not sins of themselves may be crimes, and there are an indefinite number of sins that are not punished by the law as crimes. To meet any crime with forgiveness and remission of penalty, undermines the respect for all law. But religion finds itself unable to deal with breaches of law otherwise than in the category of sin; and if it attempts to punish crime as sin it makes unjustly-severe penalties in some cases, and remits all penalty in others, and thus confounds the standards of justice.

This distinction of methods appears also in the school. Religion demands implicit submission to authority, and the limitation of the exercise of free criticism; individual opinion is not permitted to have validity in the presence of religious dogmas. The individual must submit in humility and not question, because religious utterances express the wisdom of the race. On the other hand, in the studies of the school, such as mathematics, natural science, history, and grammar, the pupil is encouraged by all means to exercise a critical alertness, and to summon all conclusions before the tribunal of his individual reason. The analytic studies of the school are a preparation for an intelligent insight into those parts of religion or theology which imply erudition and criticism. But for the most part, religious truth is revealed in allegoric and symbolic form.

On account of this difference in spirit we find often that the attempt to unite religious instruction with secular tends to cultivate habits of flippant and shallow reasoning on sacred themes, thus sapping the foundations of piety; or that, on the other hand, the influence of the dogmatic tone of the religious lessons creeps into the secular recitations and drives out critical acuteness and independent thinking from the mind of the pupil. Too much authority leaves too little room for original, independent thinking. Accordingly, the days of the closest union of the school with the Church were the days of almost exclusive culture of the memory, a tendency which has cost the educators of this day much trouble to check.

In religious lessons, wherein the divine is taught as revealed to the human race, the raw, immature intellect of youth is not to be permitted to attempt to construct for itself theoretically the contents. This can be done safely only by maturest minds, who have not only thought deeply, but have attained a rich experience in life.

These views of the question leave us in doubt as to the wisdom of those who advocate the retention in all cases of formal religious instruction in schools. Perhaps religion has suffered in our day from too much reliance on the inefficient remnant of religious instruction which still lingers in the schools. If this be true, the sooner the Church arouses to a sense of its duty in the matter of furnishing religious instruction independently of the secular school, the safer will it be for the all-important interests which it bears. Dr. Vincent and the Chautauqua enterprise furnish practical lessons as to methods and measures which the Church may use.

13. In conclusion your committee would call attention to the points already discussed, *viz* :—

(1) That in the mechanical virtues so important for making good citizens, the training in the schools is already admirable. Human freedom is realized not by the unaided efforts of the individual, but by his concerted or combined effort in organized institutions like the State and Civil Society, Those mechanical virtues make possible the help of the individual in this combination, and fit him for the modern world now bent on the conquest of Nature.

(2) The social virtues, Justice, Politeness, and respect for law, may be provided for equally well, although in fact they are not successfully taught in all schools.

(3) The celestial virtues can be taught by teachers inspired by those virtues, and by no other teachers. The empty profession of such virtues without the devotion of the life to them is likely in the schoolroom even more than elsewhere to produce the well-known practical result of atheism.

Your committee take occasion here to mention the project of a series of new text-books in morality, under the editorship of distinguished and competent clergymen who have formed an association for the purpose. Your committee believe that such works will do much good, although they can neve requal in efficiency of moral influence the discipline of the school in the hands of the competent teacher. The direct training of the will into habits of doing is everywhere superior in morals to mere theoretical instruction on the subject.

All of which is respectfully submitted.

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THE TEACHING OF MORALITY IN SCHOOLS.

BY MRS. ELIZABETH B. CHACE, RHODE ISLAND.

There is no question of human interest that is of so vital import as is that of the building-up of good human character. Indeed, we may well say that all other interests depend for their real value upon this one foundation. It is also certain that, to build this character well, it is necessary that the development of the moral faculties should begin at an early age; and, so fully has this been recognized by the most enlightened minds, that the idea that "Just as the twig is bent the tree's inclined," has found frequent utterance, ever since the day when King Solomon said, "Train up a child in the way he should go, and when he is old he will not depart from it."

Although in every human soul is enkindled that divine spark which is variously called the voice of God, the inner light, the conscience which checks and warns us when we are assailed by temptation, it is yet true that it is left to circumstances, to instruction, to experience, to determine whether we shall know clearly and distinctly the difference between right and wrong, and whether we shall be true enough and strong enough to heed the voice which bids us choose the good and reject the evil in all the concerns of our daily lives.

As population increases in our country, bringing together the vices of differing races and different degrees of civilization, it becomes more and more apparent, to the thoughtful and the humane, that some more positive and active moral force than any we have now in operation is needed to stem the overwhelming tide of immorality which, say what we will and admit all we can of the virtue which really does exist among us, is polluting the atmosphere of our civil, political, and social life to an extent that is seriously alarming. In the belief that ignorance is fruitful of vice and crime, we have wisely established a system of popular education which, as far as it has yet progressed, has been very effective in intellectual development; while, in view of the constant increase of vice and crime, the amount of pauperism, the lack in society at large of nice moral perception and of just discrimination between right and wrong, in the daily intercourse of people one with another, we are learning that our system is imperfect until we engraft upon it a more thorough method of training, that shall result in a higher standard of moral character. In response to this growing sentiment, an occasional essay has appeared in some periodical, or been presented at an educational meeting, urging the teaching of morality in schools; the subject is frequently mentioned in public discussions; it is not always omitted in the reports of school committees and superintendents of schools; and in private conversations it is often earnestly advocated. And yet, I miss, in all these, any clear, distinct commendation of some practicable methods of instruction in the science of morality. While the idea is often expressed that the true purpose of our system of education should be the development of all the faculties, and interesting and 'valuable details and illustrations are given of practical methods of teaching the usual studies, I fail to find that any plan is proposed in all these discussions for giving to pupils the regular systematic instruction concerning conduct and the formation of character and the principles by which their lives should be governed, such as is urged in the teaching of geography, grammar, and arithmetic. It seems rather to be taken for granted, that our system of public instruction in the ordinary branches of learning, and the necessary restraints and requirements of the school-room, are, of themselves, sufficient to accomplish all that is to be expected of the school in the development of the character of the scholars. And, therefore, except in rare instances,—and I am happy to be able to say there may be found such, where teachers have, on their own responsibility, established methods of instruction in morals,—I am forced to the conclusion that morality, as a science, is omitted from the course of study in our public and private schools.

In looking over this matter it is to be considered that children of the school-age spend the best part of the day in school; so that, where the parents are qualified and disposed to give the needful instruction, their opportunities for doing so are less than those of the teacher; and it is a well-known fact that a large proportion of the homes are destitute of this qualification and disposition.

The vagueness in regard to moral teaching, so noticeable in all educational discussions where it is alluded to at all, is, of course, very much due to a deficiency in the minds of educators themselves of any distinct conception of proper methods of giving such instruction. It has not, to any effective extent, been put into text-books in the form of questions and answers; it has not been made an absolute requirement, like the teaching of reading and writing. The ability to teach morality has not been a subject of searching inquiry in the examination of candidates for teaching, or, universally, of any special training of teachers.

Added to these deficiencies has hitherto been a strong feeling that the questions of abstract right and wrong are so intimately connected with and dependent upon the religious opinions, the beliefs theological and speculative, that it would be impossible to deal with them among children without coming into collision with the differences and disputes which divide people into sects; and, therefore, the teaching concerning conduct in the daily life has been left mainly to chance. The result is what we see all around us, and is what might be expected. I consider, therefore, that a very essential part of the opportunities and duties of the school have been hitherto overlooked and neglected in our educational system; and I have thought that I might possibly say a word that would help others to find a way out of these difficulties, and do something toward the adoption of methods conducive to moral progress.

There are certain principles concerning right and wrong which have been accepted by mankind as true ever since the dawnings of civilization, the knowledge of which has grown out of human experience. These principles belong, especially, to no creed nor to any form of theological belief; and they can be taught entirely independent of them all. They have been transmitted through the ages by sages, philosophers, and preachers, as of practical importance in the conduct of life; they are found in the books of all nations and of all religions, written in all periods of the world's history of which we have any record; and to-day they remain unalterably true, and are still applicable to all the exigencies and vicissitudes of life. The following I quote from examples so numerous and so excellent that I find it difficult to choose:

OF TRUTH.

"Thou shalt not bear false witness."—*Moses, Hebrew Lawgiver, B.C.* 1571.

"As the body is purified by water, so is the soul purified by Truth."—*Manu Hindu, B.C.* 1200.

"Let not thy tongue say what thy heart denies."—*Lao-tse, Chinese, B.C.* 604.

"Be very scrupulous to observe the truth in all things."—*Zoroaster, Persian, B.C.* 589.

"Thou shalt speak no word that is false."—*Buddhist commandment.*

"Speak every man truth with his neighbor."—*Paul the Apostle, A.C.*

OF MORAL COURAGE.

"Remove thy feet from evil. Turn not to the right hand nor to the left. Ponder the path of thy feet, and let all thy ways be established."—*Solomon, king of Israel, B.C.* 1015.

"Like a solid rock, unshaken by the wind, wise people are unfaltering amid praise or blame."—*Buddha-Sakya Hindu, B.C.* 627.

"Whatever people may think of you, do that which you think to be right."—*Pythagoras, Grecian, B.C.* 580.

"To know a thing is right and not to do it is a weakness."—*Confucius*, *Chinese*, *B.C.* 550.

"Why, even of yourselves, judge ye not what is right?"—*Jesus Christ.*

THE LAW OF JUSTICE.

"Thou shalt love thy neighbor as thyself."—*Moses*, *B.C.* 1571.

"That which thou blamest in another, do it not thyself."—*Thales*, *Grecian*, *B.C.* 640.

"Do as you would be done by."—*Zoroaster*, *Persian*, *B.C.* 589.

"What you would not like to have done to yourself, do not to others."—*Confucius*, *Chinese*, *B.C.* 550.

"Let none of you treat his brother in a way he himself would not like to be treated."—*Sabean Book of the Law*, *Ancient.*

"The eternal, unchangeable law of all beings, is to seek the good of one another, like children of the same Father."—*Cicero*, *Roman*, *B.C.* 106.

"All things whatsoever ye would that men should do to you, do ye even so to them."—*Jesus Christ.*

"Woe to them that give scant measure, and exact full measure from others."—*Mohammed*, *A.C.* 609.

"The sentiment of justice is so natural, so universally felt by mankind, that it seems to me to be independent of all law, all party, all religion."—*Voltaire*, *French*, *A.C.* 1782.

OF RETURNING GOOD FOR EVIL.

"If thine enemy hunger, give him bread to eat; if he thirst, give him water to drink."—*Moses*, *B.C.* 1571.

"Return good for evil."—*Manu*, *Hindu*, *B.C.* 1200.

"If a man foolishly does me wrong, I will return to him the protection of my ungrudging love. The more evil comes from him, the more good shall go from me."—*Buddha Sakya*, *Hindu*, *B.C.* 627.

"The good should be met with goodness, and the not good should also be met with goodness."—*Lao-tze*, *Chinese*, *B.C.* 604.

"Love your enemies; bless them that curse you."—*Jesus Christ.*

"Be not overcome of evil, but overcome evil with good."—*Paul the Apostle*, *A.C.*

"It is good to overcome evil with good, and it is evil to resist evil with evil."—*Mohammed*, *A.C.* 609.

"Always meet petulance with gentleness, and perverseness with kindness."—*Sadi-Gul*, *Persian*, *A.C.* 1175.

OF SELF-CONTROL AND FORGIVENESS.

"A soft answer turneth away wrath, but grievous words stir up anger."—*Solomon*, *B.C.* 1015.

"Abstain from wrath. Let a man keep in subjection his speech, his arm, and his appetite."—*Manu*, *Hindu*, *B.C.* 1200.

"Reply to thine enemy with gentleness."—*Zoroaster*, *B.C.* 589.

"Do not call ill-names. Thou shalt avoid all anger, hatred, and bitter language."—*Buddhist commandment.*

"Be rigid to yourself and gentle to others."—*Confucius*, *B.C.* 550.

"One who is injured ought not to return injury . . . for, on no account can it be right to do injustice."—*Socrates*, *Grecian*, *B.C.* 469.

"Let us not listen to those who think we ought to be angry with our enemies, and who believe this to be great and manly."—*Cicero*, *B.C.* 106.

"If he who injures does wrong, he who returns an injury does equally wrong."—*Maximus Tyrius, Roman, A.C.*

"To endure and to pardon is the wisdom of life."—*Mohammed, A.C.*

OF TEMPERANCE.

"Look not upon the wine when it is red, . . . for at last it biteth like a serpent and stingeth like an adder."—*Solomon, B.C.* 1015.

"Inflaming wine that weakens both body and mind."—*Homer, Grecian.*

"The man who drinks intoxicating liquor pulls up his own root."—*Buddha Sakya, B.C.* 627.

"Thou shalt not drink wine nor anything that may intoxicate."—*Buddhist commandment.*

"Bodily enjoyment depends upon health, and health depends upon temperance."—*Thales, Grecian, B.C.* 640.

"Strength of mind depends upon sobriety, for this keeps reason unclouded by passion."—*Pythagoras, B.C.* 580.

"Temperance is a tree which has contentment for its root, and peace for its fruit."—*Arabian maxim.*

"If it is a small sacrifice to discontinue the use of wine, do it for the sake of others; if it is a great sacrifice, do it for your own sake."—*Samuel J. May,* 19*th century.*

OF PURITY.

"If any one speaks or acts from evil thoughts, suffering will follow as surely as the wheel follows the carriage."—*From Dhammapada.*

"Virtue is the health of the soul. Vice is its disease, its bad habit, its deformity. Is not he wretched who enslaves the divine portion of himself, his soul, to the unclean appetites of his body?"—*Plato, Grecian, B.C* 429.

"The more a man becomes addicted to sensual pleasure, the more completely is he a slave."—*Seneca, Roman Stoic.*

"Blessed are the pure in heart."—*Jesus Christ.*

OF HONESTY.

"Thou shalt not defraud thy neighbor, neither rob him."—*Moses, B.C.* 1571.

"Abstain from unlawful gains."—*Manu, Hindu, B.C.* 1200.

"Immediately relinquish any advantage that has been gained without equity."—*Veda, Hindu, B.C.* 800.

"Shun bad gains; those losses in disguise."—*Hesiod, Grecian, B.C.* 900.

"Take not that which belongs to another."—*Zoroaster, B.C.* 589.

"Let no man remove the landmark of his friend, or his neighbor, or his fellow-citizen."—*Plato, B.C.* 429

"Let no man go beyond and defraud his brother in any matter."—*Paul the Apostle.*

OF BENEVOLENCE.

"One should feel compassionate interest in the welfare of all human beings."—*Buddhist Scripture.*

"The liberal man who eats and bestows is better than the pious man who fasts and hoards."—*Persian, A.C.* 1175.

OF BROTHERHOOD.

"Love all mankind equally."—*Buddhist commandment.*

"The good man loves all men. All within the four seas are his brothers. Love of man is the chief of all the virtues. The mean man sows that himself or his friends may reap; but the love of the perfect man is universal." — *Confucius, B.C.* 550.

"It is not life to live for one's self alone: let us help one another."—*Meander, Grecian, B.C.* 342.

"There is no higher duty than to work for the good of the whole world."—*King Asoka, Buddhist, B.C.* 250.

"We are members of one great body; and we must consider that we were born for the good of the whole."—*Seneca, Roman, A.C.* 3.

"The world is my country. To do good is my religion."—*Thomas Paine, A.C.* 1797.

"For the distant still thou yearnest,
And behold, the good is near!
If to use the good thou learnest,
Thou wilt surely find it here."
—*Goethe, German philosopher.*

"The human heart is like heaven; the more angels, the more room."—*Frederica Bremer, Swede, 19th century.*

"A new commandment I give unto you, that ye love one another."—*Jesus Christ,*

OF HOME VIRTUES.

"He loved his father, he honored his mother, he loved his brethren and never went from home in a bad temper."—*Epitaph on a very ancient Egyptian tomb.*

"Honor thy father and thy mother."—*Moses, B.C.* 1571.

"Treat old age with great reverence."—*Zoroaster, B.C.* 587.

"Very near together are hearts that have no guile."—*Confucius, B.C.* 550.

OF ALL VIRTUE.

"Virtue is what man owes himself. Though there were no heaven, nor any God to rule the world, virtue would be none the less the binding law of life."—*Hindu.*

"Keep thyself simple, good, pure, kind, and affectionate."—*Marcus Aurelius, Roman, A.C.* 12.

OF WORK.

"Whatsoever thy hand findeth to do, do it with thy might."—*Solomon, B.C.* 1015.

"Not work, but idleness, disgraces men."—*Hesiod, Grecian.*

"If anything is to be done, let a man do it: let him attack it vigorously."—*From Dhammapada.*

"The best thing is to do the present thing well."—*Pittacus, Grecian, B.C.* 600.

"I would rather make my fortune than to expect it."—*Galen, a Greek physician, A.C.* 3.

With all this array of moral precepts from sources so widely different, and so much more that may be found, it is very evident that the importance of virtuous living has been a universal sentiment among all the leaders of human thought, irrespective of their theologies or of the age in which they lived. And, therefore, notwithstanding the still-existing differences in creeds and ceremonials, there need be no hesitation or conflict in regard to the teaching in schools of all the duties of life which affect the relations between man and man. To this end the moral training of children should receive more attention in educational associations, and should be therein discussed in detail, as are other important topics. School committees and school superintendents should be elected, not on political, sectarian, nor even on benevolent grounds, but solely on account of their individual fitness in every respect to judge wisely in all educational matters, among which the teaching of moral science should hold a prominent place. A committee so chosen would be prepared to estimate properly the qualifications of candidates for the position of teachers. The moral character, the daily life, the principles by which that life is governed, and the ability to impart moral instruction, including the necessary preparation therefor, should all be made the subjects of searching examination and inquiry. To the school-room the teacher should bring the personal influence, the inspiration, so to speak, of a character in which the gentle as well as the heroic virtues are conspicuous. And here every opportunity should be embraced to impress, by example, by precept, by illustration, upon the minds of the scholars the paramount importance of the cultivation of the moral faculties co-equal with the intellectual. I would not have this sentiment acquired by committing to memory printed answers to printed questions, neither would I encourage a great amount of preaching by the teacher; but I would have a constant sifting-in, a mingling of the moral with the mental food, as salt is mingled with the physical. Scarcely a lesson need occur from which some moral instruction may not be drawn. For example: in the study of geography and history, the benefits of peace, of brotherhood, and of unselfish international exchange; in zoölogy, kindness to animals; in natural philosophy and chemistry, the wonderful harmony and fitness of things, one toward another; in mathematics, the exactness of proper methods in producing certain desirable results,—may all be made by skillful, conscientious handling, to lead to a perception of the excellence of right-doing in the conduct of life. Here, also, would necessarily come in the cultivation of the social qualities, so nearly allied to, if not identical with, the moral. For, in all discussions of these questions, and, indeed, of any questions, the teacher should not, by any means, be the principal speaker. The scholars should be not only permitted, but encouraged, to speak freely their own thoughts in an open debate with the teacher and with each other; no restraint being imposed, farther than to preserve order, and for the proper limitation of time. Of course I am aware that, in some schools, the practice of discussing the lesson is, in some degree, encouraged; but I would have it made more extensive; and I would have it a requirement in all schools, and not the incident of a few. The reading-lesson in our class-books often contain the suggestion or the illustration of some moral principle; but as they are read in most schools which I have visited, it has been with very little observation of their meaning, and, as a general practice, with no discussion of the principles. Indeed, in listening to class-reading, I have often marveled at the ability to train scholars to read so well, with so little attention to what they were reading about. The practice of discussing the contents of the lessons creates in the scholars the habit of reading carefully, of digesting the matter well, and choosing, outside the school-room, such reading as is profitable, besides opening a wide field for good and lasting impressions to be made, at the same time that it cultivates the ability to express the thoughts easily.

As a regular exercise in morals I would recommend that, at stated times, perhaps once a week, a topic should be presented to the whole school; as, for instance, Honesty, or Truthfulness, or Self-control, — the precepts concerning it, one or more, to be read to the scholars and fixed in their minds by committing one of them to memory. A certain number of days should be given to its consideration, when, finally, an hour or more should be devoted to its discussion; every scholar being encouraged to express some opinion, to give some illustration from his own experience, to tell some story, or in some way to take part in the debate. The teacher might vary the exercises and stimulate the interest by asking some questions addressed personally to the pupils. For example, if Honesty was the subject, he might say, Suppose you buy something and find afterward that the trader gave you too much change; or, if something has by mistake come into your possession, and you learn, after having used it yourself, that rightfully it should have gone to another person, what ought you to do? If the subject is Truth, the question might be, Is it right, under any circumstances, even in jest, to say what you know to be untrue? If it is Self-control, — Supposing you find yourself falling into a habit which, though not very harmful, is not useful, and may lead to something worse, and is, at least, disagreeable to to your friends; how will you deal with it? And so on, through the whole series of moral qualities, enough variety in subject and form may be found to furnish fresh material for study and reflection during the school-life of any one student. Of course, the teacher should exercise proper discretion in the manner of presentation, regarding the age and capacity of the scholars; but there is no moral law that is too complex to be presented, in some way, to the children of the primary school; thence to be carried forward, step by step, in all its subtler meanings, through all the grades of our educational system.

Next to a sound natural inheritance, the Frœbel method of development through the kindergarten, lays, in the best manner yet discovered, the foundations of good character; and this method must ere long be engrafted upon our public school system. As a result of this moral teaching, of which I have only given suggestions of what it might become, I should expect very soon to see among boys and girls the evidences of better thinking, and consequently of better acting. Among these evidences would be more conscientiousness in the school-room; and outside, the disappearance, to a great extent, of the rudeness and vulgarity that now so characterize the ordinary school recess that many persons interested in education desire to see it abolished, and careful parents hesitate to send their children where they will be exposed to its baleful influence. This thorough training in moral science would bring into the life of the student higher tastes, aspirations, and purposes, than those which now too often lead him into rowdyism, vice, and crime.

Another result of this coöperative method of instruction would be the entire disuse of the rod in the schoolroom. In the first place, the influence, personally, of these discussions, if the teacher was of the right stamp, would be to create so much sympathy between teacher and pupils, and such a common interest in the theory and practice of virtue, as to remove so nearly all ,occasion for the use of this relic of barbarism that what occasion might possibly arise could be easily dealt with in some better way. In the next place it would soon appear that corporal punishment is entirely irreconcilable with this method of instruction. In a proper treatment of the question of self-control, for instance, it would be evident to both teacher and scholar that the precept under consideration applies equally to both. The discussion of the duties of persons toward each other, as taught by the golden rule, would inevitably lead to the conclusion that, if it is wrong for the pupils to inflict bodily injury upon one another, it is equally wrong for the teacher to do the same. And I may not pass over this part of my subject without expressing my unqualified disapproval of all punishments of this character. I consider the whole system demoralizing and degrading to the teacher, the scholar, and the witness; and therefore, without waiting for its working out of use by the process of general development, as it certainly must, I would urge upon all teachers within reach of my influence, its immediate and unconditional abandonment. I consider the teacher who employs this method of enforcement, as well as the scholar on whom it is inflicted, the victim of a bad system. If the authorities commend the practice, they must leave to the teacher the discretionary power to decide as to the time, the occasion, and the degree of severity. And I am not sure but that, in a Puritanic mind, the more conscientious the teacher, the more frequent would seem the necessity for such punishment, which for the same reason might be more severe. But in such case the injury to the moral nature of both parties would be all the greater. So, I would have the whole thing swept away, as a barbarism too horrible for the civilization of to-day, as we abolish the thumbscrew, the tread-mill, and the underground dungeon, in our treatment of criminals. I could not say to a child, —

> "Let love through all your actions run,
> And all your words be mild,"—

and then beat him for offending or disobeying me.

It needs no gift of prophecy to foresee that this thorough training in moral science would very soon manifest itself in the intercourse of its students in all the incidents of their daily lives. Girls and boys so taught would, in the majority of cases, give early promise of a higher and nobler manhood and womanhood than we find ourselves a part of to-day. As they entered upon the active duties of life, a better sentiment of justice, of honesty, of self-control, of purity, would prevail among them, ennobling and purifying society, trade, politics, and religion. The men and women so educated would be better husbands and wives, better fathers and mothers, better neighbors and friends. As time went on, and another generation came upon the stage, crime would become less frequent; drunkenness, almost unknown; vice in all its forms would be greatly diminished; the laws of health would be obeyed; our penal and charitable institutions would be changed into hospitals and schools; our streets would be safe thoroughfares for all healthful, industrial, and beneficent exercise, exchange, and transportation, where our sons and our daughters could walk unmolested and unharmed, and where official restraint, violence, or assistance, would seldom be required. Citizenship would be elevated to an unselfish endeavor to secure the best welfare of the whole people. Our office-holders and lawmakers would be men and women chosen for their exceptional fitness to devise and prosecute measures for the elevation and continual advancement of all the inhabitants of the State and Nation; and the people, morally, mentally, and physically sound, would be correspondingly virtuous, prosperous, and happy.

COMPULSORY EDUCATION.

BY BEN BLEWETT, A. M., MISSOURI.

The question of compulsory education is an intricate one; and each community in settling it will have to consider a great many details peculiar to its own circumstances. But the question has two points of general interest, viz.: (1) Can compulsory education be justified by any theory consistent with a democratic government? (2) Has it ever been successfully tried by any community? This paper touches these points.

False ideas often obtain on the most important subjects of social science because people will persist in looking at but one side of many-sided topics. The question of public schools has not been fortunate enough to escape this danger; but, on the contrary, has probably carried more than its share of the burden. A man, who with becoming modesty will acknowledge his ignorance as to the relative value of a double or a single standard in money, will, in most cases, think himself competent to give worthy opinions on the public schools, though he may not have devoted half the time to the study of the latter subject as to the former. However wrong this may be, it is very natural. Scarcely a citizen but daily comes in contact with some of the *detail* workings of the schools; he becomes familiar with them, feels himself to be, and is, competent to pass upon these details. The fault lies in not seeing and comprehending the great " wherefore " in which all these details are lost. In our hurry to get on, we have no comprehensive view of the *whole*. It is constantly worth while for us to stop and take a perspective view of the public school among social institutions, that we may get a proper idea of it by seeing it in its relations to its surroundings.

Nothing, I believe, comes by chance; and nothing, I believe, comes but by some slow, steady progression, step by step in its advance. In order that we may see the full force of an institution, it is necessary that we grasp the essentials in the formation of the crudest society and trace them in their growth through the developing states. Man in his original condition was limited only by the laws of his physical surroundings; *his will* was his rule of action. Under such circumstances it would not be long ere the individual wills would clash; then some one individual will would become preëminent; there would be some particular hunter, or fisher, or fighter more bold and more successful than his neighbors. He would become the hero, the god, of his family, of his tribe, of a community of tribes. His love of self makes him a tyrant; their fear makes his people his servants, rendering to him a treacherous submission, such as a pack of famishing wolves gives to its leader,—a submission that would not hesitate to devour him should no other victim be found. In him, as brute master of brute qualities, lies the germ of the State. The *range* of his functions is most narrow, but *within those limits* his power is most unmitigatedly absolute. And in the growth of government through the successive stages of patriarchal, military despotism, absolute monarchy, monarchy, on to the republic, we see it assuming a broader and broader *range* of functions, and at the same time becoming in the exercise of these functions more and more subservient to popular will. Or looking at the other side of the picture, the individual is constantly surrendering more and more of his peculiar prerogatives, and is constantly gaining stronger and stronger power in the control of State workings. The man, in surrendering more of his powers, is making a less absolute surrender, for his will conflicts less with the universal will. From the apparent cramping of the individual comes enlarged individuality; the State, by closing up those channels in which the individualities would clash, tends to throw all action into the courses where the harmonious confluence makes a mightier power, in whose strength each particle participates. And thus in the growth of the State, the man becomes more and more a responsible agent in its actions.

In permitting this participation in its functions, the State must, of course, demand that the individual have the qualifications requisite to keep his power from detracting from the public welfare; if the people are to be the rulers, they must be made worthy of the place,—they must be educated. Draper, in summing up his study of the *Intellectual Development of Europe*, gives the following pertinent question and answer: "What, then, is the conclusion inculcated by these doctrines as regards the social progress of great communities? It is that all political institutions, imperceptibly or visibly, spontaneously or purposely, should tend to the improvement and organization of the national intellect." The only possible way of accomplishing this result is the establishment by the State of suitable schools which all may attend, and which all who do not or cannot get the requisite knowledge from other sources must attend. Here we must draw sharply the position of the whole and that of the part.

It is the function of the State to provide for the individual whatever may be necessary for him to have, that the commonweal may be secured. The individual has no right to demand anything from the State other than the right to obtain whatever may not interfere with the commonweal. In the animus of the public schools there is not the first shadow of pauperism clad in the sentimental garb of inalienable right inherited from some mystic source; for, by my proposition, they have been formed by the State for its own protection and assistance, and if not accepted by individuals, should be forced upon them, unless the required culture is obtained in other ways. So the doors of the public schools are thrown open to even the poorest not by charity, but by the sovereign might of the State, which demands that no *one* shall stand in the way of the progress of the *whole*. And while the individual must know that this is forced upon him by a mightier power than his own, he should, at the same time, take pride in the consciousness that he has contributed to that power his little mite of money, or muscle, or brain, or soul. The inflated man of wealth, demanding that his indulged child be handled with gloved hands, or the conceited loafer swelling ridiculously with the idea of being a free voter in a glorious state of liberty, and protesting that such important individuals as himself and progeny should of moral necessity be most carefully nursed,—both of these have to learn the most important fact of political science,—that the individual, merely as such, is insignificant and only attains importance when, in combination with his fellows in submission to law, he acquires *as his own* the combined strength of the *community* into which the units are assimilated.

The principle lying at the foundation of the public schools is, then, preservation of the civilized State, and the first and most characteristic feature we see from this point of view is the right of compulsory attendance. There are a great many sentimental objections to compulsion; and even a person without the least trace of sentimentality, and at all familiar with the vast machinery and expense possibly necessary to enforce successfully a law for compulsory education, will go cautiously and examine before he advocates such a law. The old maxim, "Be sure you're right, then go ahead," is, no doubt, a sound one; but it is very natural, if there is possible danger in advance, to inquire what has been the fortune of others placed in similar circumstances; and if perchance we find that they have been successful, our previous consciousness of our own rectitude of judgment is apt to be increased. There is nothing so establishes our faith in a theory as seeing it shape itself in pleasing figures. It was as late as 1870 before anything like an organized effort in the direction of popular elementary education was made in Great Britain, yet the history of that effort for the last twelve years is replete with most astonishing results. The following facts I get from the report of William Jack, A.M., LL.D., one of Her Majesty's inspectors of schools:

> "In the English education acts of 1870 the government for the first time sanctioned the principle that wherever the school board of a locality believe that children ought to be compelled to attend schools, parents may be compelled to send them under penalty of fine or imprisonment, under such by-laws as the school board may enact." . . . "In the new education act of 1876, England has adopted the principle of universal compulsion, creating a school-attendance committee where there is no school board, and enjoining that committee or the school board of the parish to make and enforce by-laws, and otherwise carry out the provisions of the act."
>
> "Its provisions are briefly these, viz.:
>
> "1. It is declared to be the duty of every parent to see to the elementary education of his child above five and below fourteen years of age.
>
> "2. No employer is permitted to employ (*a*) any child under ten years of age, with certain exceptions; or (*b*) any child over ten and up to fourteen without a certificate either of education or previous attendance of due amount."
>
> "The parent is liable for his child, and he may be fined or his child taken from him and sent either to a certified industrial school or to a new kind of certified day industrial school which will give meals,—probably in most cases midday meals,—but not lodging."

Under this act the several cities have elected boards under whose inspection are thrown all the schools within their respective municipal limits, whether these schools be supported by private enterprise, by the Church, or by the Government. The standards or grades of scholarship established by the boards are thus recognized in all the efficient certified schools; and parents may send to the Board or Church schools, as they choose. By-laws of more or less sternness have been adopted, but most generally the committees have made strong appeals to the better-nature of parents before calling in the aid of the magistrate.

From the report of the Glasgow Board I take this extract, showing how the work was begun there:

> "As a preliminary to the operations, the officers were instructed to make a house-to-house visitation of every family in the city." . . . "The inquiry extended from September, 1873, till the close of 1875." . . . "The result showed that after making careful allowance,—for all for whom it should be made,—there was found a gross amount of more than 20,000 defaulters." . . . "A large portion of these defaulters were disposed of in a satisfactory manner, about seventy-five per cent. of them having

been quickly got to school by very simple means; viz., a call by the officer, followed up when necessary by a printed form, directing attention to the requirements of the Act."

I give a table showing the full growth of the Glasgow schools under compulsion:

Year	1873.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
No. on the roll,	53,796	66,598	65,287	67,869	70,202	70,943	70,702	70,807	74,024
Average No. in attendance,	43,803	53,805	54,112	57,423	58,660	59,968	59,148	59,666	62,467
Percent. of ave. attendance to No. on roll,	81½	80¾	83	84½	83½	84½	83⅝	84.26	84.30

Thus in a city where there was no increase of population to affect the result, compulsion increased the number in attendance 22.83 per cent. in the first two years of its operation, and 42.60 per cent. in twelve years. The increase in these twelve years of the number on the roll was 37.60 per cent. Another remarkable feature of these statistics is, that in spite of this large increase coming to the schools from the very class we should naturally expect to be irregular, the percentage of those attending to those on the roll has constantly increased from 81½ per cent. in 1873 to 84.39 per cent. in 1882. The explanation of this is found in the report of the committee, viz.:

"With the view of securing regular attendance a system has been thoroughly organized, and is now in successful operation, whereby once a week the teachers supply a list of children who have not made at least six attendances per week. The officers call at all the schools on Friday and are supplied with such lists On Saturday the officers are engaged at arranging the lists; the names are entered in their visiting-books in proper order for visitation. On Monday and the following days they visit, and, where necessary, remonstrate with the parents of absentees, serving, in certain cases, a printed form of warning and remonstrance, and directing attention to the requirements of the Act. On the following Friday they report the results to the teachers, and receive new lists for visitation on the succeeding week."

"The remarkable part of the case of Glasgow," says Mr. Jack, "is the manner in which compulsory clauses have been worked." . . . "The Board goes down among defaulting parents, holding frequent meetings in their own localities, to hear the stories of the poor and to persuade them for their own and their children's good." . . . "They try everything before they prosecute. They distribute copiously fly-leaves narrating the facts, so as to make every actual prosecution go as far as possible in persuading other people. Gentleness would be useless without firmness, and the Glasgow Board has not worn its sword of justice altogether in vain; but it has shrunk from prosecution with an energy and a success which, now that compulsion is to be universal, I hope we may see widely imitated." "Many people," continues Mr. Jack, "seem to doubt the efficacy of fly-leaves, and to want something a little more like fly-blisters."

He then quotes from a speech of Mr. Mitchell, who has been chairman of the Glasgow school-attendance committee for eleven years :

"My belief is that the fly-sheets on which a few of the worst cases are recorded, with the corresponding penalties, are far more effectual with flagrant defaulters than actual prosecution itself would be. They see there, or have read to them, details of prosecutions wherein parents neglecting the education of their children have been fined and imprisoned, and the dread of a similar infliction on themselves has an effect probably more powerful than a sheriff's warrant. Those of us who witnessed the proceedings in the sheriff's court connected with a few prosecutions which we instituted last year, must have been impressed with the conviction that the cure was nearly as bad as the disease. I am inclined to believe we have nearly as many necessary illustrations for our fly-leaves as may serve our purpose and prevent the need of prosecutions for many days to come. Without doubt these meetings have had the best possible effect, both directly and indirectly. Still I would remind the Board that for one parent dealt with in this way, there are a hundred defaulting parents who have been induced to send their children to school by means altogether different. The call of the school-board officer, the printed form setting forth the requirements of the education act, the persuasive remonstrance and warning which the officer plies during repeated calls, — these have been by far the most effectual means in enabling us to reduce the number of defaulting parents. The officers, no doubt, who are always present at the Board meetings with the defaulting parents, have largely imbibed the spirit of forbearance and sympathy which the Board has shown to the poor people who are brought before it, and this has given them access to the parents and a success in their work which they might not otherwise have obtained."

The following table will show the truth of the foregoing remarks:

TABLE OF PROSECUTIONS.

Year	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	*Total.*
Number of warning forms served,	240	2,212	3,330	3,271	6,410	2,096	5,322	6,076	7,227	5,036	4,1220
No. of Board meetings with defaulting parents,	—	5	12	10	17	17	20	20	21	21	143
No. of defaulting parents summoned before the Board,	—	474	1,289	578	1,220	1,376	2,046	2,101	2,133	2,016	13,233
Number of Prosecutions,	—	34	31	—	18	87	97	86	109	68	530

Here are only 530 cases of prosecution in ten years, against 41,220 warnings. And on the value of these warnings Mr. Mitchell comments thus, viz.:

> "Drunken fathers, intemperate mothers, deserted wives, widowers out at work with no one to look after their children, delicate health, honest poverty,—such are the kinds of cases which in endless variety are brought under notice." "It will readily be understood that counsel and advice are given to the parents, reaching far beyond the mere education of their children; and this kindly dealing is generally appreciated by the parents and followed by the best results. It is satisfactory to notice in how many instances it is possible to suggest modes of relief and assistance in connection with the various philanthropic agencies. It would be idle, however, to disguise the fact that remonstrance and warning are constantly required, and not unsparingly given, in connection with the class of cases brought about by intemperance and misconduct."

There is no question in school management more perplexing, and the solution of which requires more judgment, than that of how to dispose of those children who, for various reasons, should be separated from the mass of children, and who should themselves be just as carefully kept from the few depraved youth in the common reformatory schools. As principal of a school where daily the welfare of some fourteen hundred pupils is in my care, this question is staring me in the face constantly. The incorrigibly vicious child fortunately is seldom found; but I often have a boy who has acquired, by improper street associates and the lack of proper home influence after school-hours, habits which make him an unsuitable companion for his classmates. He does not yield to government unless the teacher takes an undue portion of the time and energy that should be expended in the instruction of 60 pupils in mastering him. Yet the boy can be managed, and though conscious that sixty are greater than one, I hesitate long before making the suspension which, in nine cases out of ten, brings the boy's school-life to an end and confirms rather than breaks his habits.

The English act, by its establishment of day industrial schools, offers a very satisfactory solution to this question. If this class of pupils can thus be thrown together under the supervision of faithful teachers during their hours of recreation as well as in school, and are returned to their homes at night, it frees some from evil associations and some from the idea which destroys all self-respect,—that out of school they have no place in the world and are vagabonds. In this way those who need the most attention have it given them, and the school proper is relieved of the friction so detrimental to its successful running. I cannot do better than quote from Mr. Mitchell's report:

CHILDREN ADMITTED INTO INDUSTRIAL SCHOOLS, AFTER DEALING BY THE SCHOOL BOARD.

Year	1876.	1877.	1878.	1879.	1880.	1881.	1882.	*Total.*
Ordinary Indust'l Schools,	50	21	35	17	11	7	6	147
Day Industrial Schools,				140	122	73	255	590
Roman Cath. Indust'l Sch'ls,	28	26	23	9	10	8	6	110
Total,	78	47	58	166	143	88	267	847

"Some notice," says he, "must be taken of the Board's dealings with the worst class of children, comprising the confirmed truants, the incorrigible or those who have got beyond their parents' control, the criminal or those who are in danger of falling into crime." "Where there are decent, well-behaved parents, this task is not beset with so many difficulties. Repeated dealings, both with parent and child, at the fortnightly meetings, in the way of remonstrance and warning, have very often been found effectual without recourse to other than ordinary measures. It is in the case of children who have neither proper homes nor decent parents that the difficulties are great; for this class the industrial schools are brought into operation."

"Special relations exist under the Juvenile Delinquency Act, 41 and 42 Vict., cap. 121, between the Board and the Day Industrial Schools, the Board being authorized to summon parents whose children are found suitable for such schools before a magistrate, who may commit them in terms of that Act. There is no doubt that the Day Industrial Schools enable your committee,—in a manner which they could not formerly do,—to discriminate between cases of children whose conduct is such that they ought to be sent to ordinary certified industrial schools and reformatories, and other children whose conduct and circumstances are not such as to make it advisable to send them altogether away from their parents." "The latter class, in too large numbers, used formerly to be sent to the ordinary industrial schools and reformatories; but since the establishment of the Day Industrial Schools the numbers in the ordinary industrial schools and reformatories have considerably diminished." "With reference to confirmed truants, it may be observed that these Day Industrial Schools have, in most cases, been found effectual in weaning them from truancy; the two principal causes of which are almost invariably found to be either the influence of bad companions, from whom they are separated in the Day Industrial Schools, or through having no proper home during the day, after the dismissal of school."

I have referred very fully to the workings of the Glasgow Board because it shows admirably the combination of business enthusiasm and clear-sighted philanthropy. I shall now present some results from London, Birmingham, and Manchester. I give here a table showing the increase in London:

INCREASE OF SCHOOL ATTENDANCE AT INDUSTRIAL SCHOOLS.

AVERAGE NO. ON ROLL.				AVERAGE NO. ATTENDING.					
Year.	Board Schools.	Voluntary Schools.	Total.	*Year.*	Board Schools.	Voluntary Schools.	Total.	*Year.*	Per ct. of ave. attendance.
1871, . .	1,117	221,401	222,518	1871, .	895	173,406	174,301	1871,	78.3
1872, . .	29,503	211,543	240,927	1872, .	19,421	165,482	184.903	1872,	76.7
1873, . .	59,606	259,543	319,149	1873, .	40,481	195,662	236,143	1873,	73.5
1874, . .	99,033	271,761	370,794	1874, .	70,853	199,613	270,466	1874,	72.9
1875, . .	123,319	263,704	387,023	1875, .	91,646	196,851	288,497	1875,	74.5
1876, . .	146,031	259,436	405,467	1876, .	114,380	199,605	313.985	1876,	77.4
1877, . .	182,121	244,832	426,953	1877, .	146,155	190,163	336,318	1877,	78.7
1878, - .	207,289	237,033	444,322	1878, .	165,900	184,607	350,507	1878,	78.8
1879, . .	233,480	235,084	468,564	1879, .	185,518	182,728	368,246	1879,	78.5
1880, . .	250,946	232,547	483,493	1880, .	200,694	181,649	382,343	1870,	79.0
1881, . .	273,177	225,327	498,504	1881, .	220,068	177,438	397,506	1871,	79.7

From this table we see that the number on the roll in Board schools has increased from 1871 to 1882, 25,328 per cent., and the average number in attendance, in the same period, has increased 25,758 per cent.,—rates not often read. The number on the roll in both Board and Voluntary has increased 127 per cent., and the average number in attendance in both Board and Voluntary, 135 per cent. We also see that the number in Voluntary schools, after fluctuations and absorption of some of the schools by the Board, remains about the same; in the board schools it has changed from 1,117 to 273,177. The per cent. of those attending is increasing in spite of the numbers forced in.

In reading these figures we must remember, however, that allowance must be made for an increase of population represented by 22.6 per cent. In Birmingham the increase in average attendance from 1871 to 1881 was 207 per cent; during the same period the increase in population was only 16.6 per cent. The following table gives the rate of increase at the end of the respective years:

Year, ...	1871.	1872.	1873.	1874.	1875.	1876.	——	1881.
Rate, ...	—	33	63	88	108	137	—	207

On the effect of industrial schools in this town the committee reports:

"The committee has given considerable attention to the power which was given by the Act of 1876 to send children whose education is habitually neglected to industrial schools, with permission to the managers of the school to let them out again on license after a short period of detention. The Board are informed that this enactment has been used in several large towns with very great advantage. The parents in such cases have been ordered by the magistrates to pay what was for them a considerable sum per week toward the maintenance of their children, the orders being seldom for less than 3*s.* per week, and very generally for 5*s.* per week. Parents who have been guilty of habitual neglect being called upon to pay in this manner during a few weeks, have been very careful when their children were allowed to go home again on license, not to get the licenses revoked. but on the contrary to take such care of them as would insure the licenses being renewed. It is reported that 83 per cent. of the children thus dealt with have become regular attendants at school."

The increase in average attendance in Manchester, from 1871 to 1882, was 66 per cent., while the increase in population was only 2.2 per cent. The following is a comparative table:

	Increase in Average Attendance.	*Increase in Population.*
Birmingham, ...	207 per cent.	16.6 per cent.
London, ...	127 "	22.6 "
Manchester, ...	66 "	2.2 "
Glasgow, ...	42.6 "	0 "

The annual cost of compulsion for the first five years, for each child in average attendance, was 1*s.* 7*d.* in London, and 1*s.* 2*d.* in Glasgow. No doubt quite a large number of pupils went voluntarily into the schools when, under the Act, accommodation was offered in the new Board schools; but, making all proper allowance for this, the reports show that the great portion of the large per cents. of increase was due solely to the healthful stimulus of the compulsory law and its efficient servants. The foregoing facts prove conclusively that the compulsory system can be worked with very little friction or expense when wise methods are applied by wise and philanthropic officers.

PUBLIC SCHOOLS IN CONNECTICUT.

BY HENRY E, SAWYER.

In the territory now embraced within the limits of Connecticut, the public-school system is coeval with civilization.

It was late in the autumn of 1635 when the choice spirits who settled Hartford, after their long tramp through the woods from Boston, built their first log-house on the site of the present beautiful city. No records of the public acts of the little colony during the first few years of its existence are to be found, but the records for 1642, seven years after the settlement, show that an appropriation of £30 was made to "the school,"—not as a new thing then first established, but as a well-recognized matter of public concern, to be provided for as necessarily as roads, military defenses, and institutions of worship.

In 1643 the town meeting ordered,—

> "That Mr. Andrews should teach the children in the school one year next ensuing from the 25th of March, 1643, and that he should have for his pains £16; and therefore the Townsmen (selectmen) shall go and enquire who will engage themselves to send their children; and all that do so shall pay for one quarter at the least, and for more if they do send them, after the proportion of 20*s*. the year, and if they do go any weeks more than an even quarter they shall pay 6*d*. a week; and if any who send their children are not able to pay for their teaching, they shall give notice of it to the Townsmen and they shall pay for it at the Town's charge; and Mr. Andrews shall keep the account between the children's schooling and himself and send notice of the time of payment and demand it; and if his wages do not come in the Townsmen must collect and pay it, or if the engagements come not to £16, then they shall pay what is wanting at the Town's charge."

This vote is copied in full because it contains the essential elements of the public-school system of Connecticut for one hundred and fifty years. It will be referred to further on.

In 1648 an appropriation was made by the town, and a committee chosen, for buying or "building a house for a school-house."

Other towns in the Connecticut colony generally followed the example of Hartford in supporting schools; for instance, in Wethersfield, in 1658,—

> "It was ordered by the town that Mr. Thomas Lord should be schoolmaster for the year ensuing, and to have £25 for the year, and also the use of the house lot and the use of the meadow as formerly; and the £25 is to be raised,—of the children 8*s*. per head of such as come to school, and the remainder by rate of all the inhabitants made by the lists of estates."

In 1650 the General Court enacted a body of laws for the government of the Commonwealth. This "code of 1650," as it is generally called, comprised a compilation of the laws passed by the General Court up to that date, and also many enactments suggested by the practices and votes of different towns, or borrowed from the statutes of Massachusetts. Under the titles "Schools" and "Children," it contains the following, among other important and stringent provisions:

"SCHOOLS."

"It being one chief project of that old deluder Satan to keep men from the knowledge of the Scriptures, as in former times by keeping them in an unknown tongue, so in these latter times by persuading them from the use of tongues, so that at least the true sense and meaning of the original might be clouded with false glosses of saint-seeming deceivers; and that learning may not be buried in the grave of our forefathers in church and commonwealth, the Lord assisting our endeavors; It is therefore ordered by this Court and authority thereof, that every township within this jurisdiction after the Lord hath increased them to the number of fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general by the way of supply, as the major part of those who order the prudentials of the town shall appoint; provided, that those sending their children be not oppressed by paying more than they can have them taught for in other towns."

"*And it is further ordered*, That where any town shall increase to the number of one hundred families or householders, they shall set up a Grammar school, the masters thereof being able to instruct youths so far as they may be fitted for the university, and if any town shall neglect the performance hereof above one year, then every such town shall pay five pounds per annum to the next such school till they shall perform this order."

"CHILDREN."

"Forasmuch as the good education of children is of singular behoof and benefit to any commonwealth, and whereas many parents and masters are too indulgent and negligent of their duty in that kind;—It is therefore ordered by this court and authority thereof, That the selectmen of every town in the several precincts and quarters where they dwell, shall have a vigilant eye over their brethren and neighbors, to see, first, that none of them shall suffer so much barbarism in any of their families as not to endeavor to teach, by themselves or others, their children and apprentices so much learning as may enable them perfectly to read the English tongue and knowledge of the capital laws, upon penalty of 20*s*. for each neglect therein."

These provisions for schools and education underwent only trifling alterations until the revision of the school laws in 1801, a century-and-a-half after this enactment.

New Haven was settled in 1638, and until its union with Connecticut in 1665 it had a distinct and almost absolutely independent government. The records of this remarkable colony show that in 1639 one Thomas Fugill was ordered by the court " to keep Charles Higginson, an indentured apprentice, at school for one year ; or else to advantage him as much in his education as a year's learning comes to." Thus it appears that in the very infancy of the colony a school was in existence and education was compulsory.

In 1644 it was ordered that a free school be set up, and about the same time a public grammar,—or as it would now be called, high school,—was established. Says the Hon. Henry Barnard, from whose writings a large part of the material of this sketch is derived :

> " It is due to historical truth to ascribe to the early, enlightened, and persevering labors of Theophilus Eaton and John Davenport the credit of establishing in New Haven, before it ceased to be an independent colony, a system of public education at that time without a parallel in any part of the world, and not surpassed in its universal application to all classes, rich and poor, at any period in the subsequent history of the State."

The distinguishing characteristics of this system seem to have been, first, that the schools for elementary instruction were absolutely free ; second, that parents and masters were required by law to see that children under their charge received a certain amount of instruction,—in other words, education was compulsory ; and, third, that provision was made by law for higher education in part, if not entirely, at the public expense.

At the union of the colonies in 1665, the laws of Connecticut superseded those of New Haven. The schools of New Haven colony lost their chief glory,—that of absolute freedom. For two hundred years, until the passage of the free-school law in 1868, the towns in Connecticut were not required to maintain schools which should be free to any except those who either were, or claimed to be, too poor to pay tuition-fees collected under the name of a " rate-bill."

In 1672 it was "ordered that in every county,"—there were then four in the State,—" there shall be set up and kept a graded school for the use of the county, the masters thereof being able to instruct youth so far as they may be fitted for college," and in 1690, stimulated perhaps by the bequests of Gov. Edward Hopkins, the Court endeavored to make the county high schools in Hartford and New Haven free. In 1690, also, the law requiring the education of children was made more stringent. The grand-jurymen in each town were required to visit each family suspected of neglecting this order, "and if they find any children or servants not taught as their years are capable of, they shall return the names of the parents or masters of said children to the next common court, where the said parents or masters shall be fined twenty shillings for each child or servant whose teaching is thus neglected."

At the close of the seventeenth century the principal characteristics of the public-school system of Connecticut were the following:

1. Every town containing more than seventy families was required to maintain a school for *eleven months* each year, and every town of fewer families to maintain one for at least six months in each year.

2. A grammar school to prepare boys for college was required to be kept in the chief town of each of the four counties, and those in Hartford and New Haven were to be free.

3. The common schools were not free, but were supported in part by the tuition-fees of such as were able to pay, and in part by a tax of forty shillings on every thousand pounds of the lists of estates, which was collected in every town with the annual State tax, and was payable proportionally to those towns only which should keep their schools according to law.

4. The schools were taught by masters, the school-mistress appearing rarely, if at all, at this period.

5. The unit in school-management was the town. There was as yet no division of towns into school-districts, no recognition of school societies or of ecclesiastical parishes, in connection with school affairs. The school-district is not a part of the original Connecticut or New England plan of organization for public schools.

6. Education was compulsory. Parents and masters were required by law to send children to school, and were punishable by heavy fines for neglect.

Most of the laws passed by Connecticut in reference to education during the eighteenth century had for their object the more complete and efficient advancement of the public-school system as it existed in the year 1701, and not the introduction of radical changes into the system itself. Three important changes, however, were introduced.

In 1714 the General Assembly ordered the civil authority and selectmen in every town to inspect the schools each quarter, to inquire into the qualifications and diligence of the masters and the proficiency of the children, to give such directions as they should find needful to render the schools most serviceable to the increase of that knowledge, civility, and religion which was "designed in erecting them," and to report to the Assembly concerning any disorders or misapplication of the public money. The schools having been established mainly for the increase of religion, the inspection and supervision of them had, from the first, been universally recognized as a regular part of the parochial duty of the clergy, and it continued for many years longer to be so regarded.

But the law just mentioned made the supervision of schools an official duty of the selectmen as agents and representatives of the towns. The present system recognizes the existence of the same right and duty of school supervision by towns, only placing its execution in the charge of officers specially chosen for that purpose. The transfer of supervision to boards appointed for that special work was made by the statute of 1798, and the change was doubtless for the advantage of the schools.

The second of the three important changes alluded to above was also made just at the close of the century, by the statute of 1798. By it the county towns were no longer required to maintain high schools, but every "school society" was authorized by a vote of two-thirds of the inhabitants present in any legal meeting, to institute a school of a higher order for the common benefit of all the inhabitants. This, which will be recognized as the basis of our present high-school system, was also a beneficial change. In fact, if higher instruction was to be furnished at all by the State schools, something like this had become necessary; for the increase of population had made the grammar schools of the county towns entirely inadequate to the work for which they were established.

The third of the great changes made in the public-school system of the State,—like the two already named,—was completed by the statute of 1798. Unlike the other two, however, it has proved disastrous to the interests of education. It was the establishment of school-districts throughout the State, and the substitution of the district system in place of the town system in the management of schools.

At first the town was the unit in school affairs. For seventy years after the establishment of public schools in Connecticut, the acts of the General Assembly make no provision for, or allusion to, any subdivisions of towns in connection with their institution, maintenance, or control. It was a century and a quarter after schools were established here before towns were authorized or permitted to divide themselves into school-districts, and for more than one hundred and fifty years the town, as such, was the agency through which the State provided for the education of its coming citizens. In 1712, the General Assembly provided "that all parishes which are already made, or shall hereafter be made by this Assembly, shall have to the bringing up of their children and the maintenance of a school in some fixed place within the bounds of their parish the forty shillings in every thousand pounds arising in the lists of estates within such parish." It will be remembered that the original townships were mostly very extensive in territory, and that the parishes were districts so remote from the town meeting-house, and containing so many inhabitants, as to justify their establishment as separate organizations for the maintenance of public worship, and that very many of them have since become towns.

In 1717, parishes were required to maintain schools for six or eleven months in the year, according to the number of families in them; were authorized to lay taxes, by major vote of the householders in them, for the support of schools, and to choose collectors, clerks, and committees. In 1766, towns and societies were authorized to divide themselves into proper and necessary districts for keeping their schools, and to alter and regulate the same from time to time, as they might have occasion.

In 1798, as has been stated, the substitution of the district, or school society, as it was called, for the town in the management of schools was made complete. In the school-law passed that year, and incorporated into the revised act of 1799, the town does not appear in connection with schools at all, the school society taking its place in all powers and duties.

The law of 1766, allowing towns to divide themselves into districts, was passed for the express purpose of making the laws for the education of children more efficient. But the introduction of the district system narrowed and dwarfed the school system of the State, so that instead of schools of different grades in each town, taught by permanent teachers and managed uniformly, there has come to be, in most towns, a single school in each district, often very small, kept by one teacher in the summer and by another in the winter, for children of all ages and in all stages of advancement, living within the territorial limits of the district.

Notwithstanding the great care with which the laws relating to education were evidently revised in 1799, the school system at the close of the eighteenth century was inferior to that in existence at its commencement. Supervision was provided for, and instead of a grammar school required in each county town, a high school was permitted in any school society where two-thirds of the householders should vote for one. But the towns had disappeared from the system, and the societies which had taken their place in school affairs were not obliged nor encouraged to maintain schools of high grade, nor were they required to keep their schools for any specified time in the year.

In 1799, the income of the school-fund was divided, for the first time, among the school societies according to the lists of polls and estates in each. It would be aside from the purpose of this paper to trace the history of this fund. The generous spirit which consecrated this vast property forever to purposes of education should be held in lasting honor. But it is indisputable that for forty years, at least, the distribution among the school societies of so large a sum as the income of the fund was injurious in its influence on public sentiment and disastrous to the schools. As early as 1810, taxation for the support of schools appears to have been done away with by a law whereby the expense of keeping a district school over the amount of public money was "apportioned among the proprietors of the school according to the number of days each one had sent a scholar or scholars to the same." This, it will be seen, was in the nature of a premium on absenteeism,—one of the worst evils with which any school system has to contend.

In his master's oration at Yale College, in 1816, Professor Olmstead spoke of the school-fund as a "provision for common schools to which, it is presumed, the world affords no parallel." He also said:

> "But while this system has brought signal blessings to the poor, it has acccustomed the wealthiest ranks to extreme frugality in the expenses of education; and as the public money has rendered it unnecessary to pay largely, many have acquired the habit of grudging to pay anything."

In 1823 a writer in the *North American Review* says, in an article on the schools of Connecticut:

> "By the present system we do not find that there is any obligation on the school societies or districts to support schools any longer than the public money affords the required aliment; and the consequence must be, what we are informed is extensively true, that the continuance of schools is determined by a very obvious and convenient rule. Taxation for schools being infrequent, must be borne with impatience. As to time, then, we do not find that anything has been gained by the schools from the operation of the fund."

Three years later, a committee of the House of Representatives, raised for the special purpose of inquiring into the condition of the schools, reported that the common schools, on which, as on a favorite child, the public resources had been lavished with great liberality, but with little care, had been declining in their relative standing; that in connection with the comparative depression of common schools there was an increasing indifference to their interests; that the parts of the system requiring more immediate attention were the books used, the qualifications of teachers, and the inspection and report of the state of the schools; and that the inefficiency of the system had, in the opinion of the committee, arisen from the neglect of supervision on the part of the State. The report concludes by recommending the appointment of a State Superintendent of Schools, The recommendation was adopted. Governor Tomlinson, in his message to the General Assembly in 1828, said: "There is too much reason to conclude that the liberal endowment of common schools has occasioned a relaxation of praiseworthy efforts to extend their utility which distinguished our fathers." And the committee of the General Assembly to which the subject was referred reported that the strong reliance on the aid derived from the school-fund was accompanied by a correspondent want of exertion in school societies and districts. This committee introduced a bill providing for the appointment of a State Superintendent of Schools, but it was not until 1838 that State supervision of the public schools was made a reality by the establishment of a State Board of Commissioners of Common Schools, whose secretary was to devote his whole time, if required, under the direction of the Board, to ascertain the condition, increase the interest, and promote the usefulness of common schools. The Board was authorized to require reports from all school visitors throughout the State, and to prescribe the form of returns.

Here ends one of the darkest chapters in the history of our public school system. Under the wise administration of the Board, and especially of its able, enthusiastic, and self-sacrificing secretary, Hon. Henry Barnard, the work of improvement began and went rapidly forward. But it was arrested four years later by the repeal of the law establishing the Board of Commissioners, and by striking out of the school-laws all provisions for encouraging better supervision and for the establishment of public high schools. Again the system was struck with paralysis, but afterward the lost ground was regained, and more.

In 1845, the Commissioner of the School-fund was made *ex-officio* Superintendent of Common Schools; in 1847 provision was made for holding teachers' institutes in each county, and in 1849 the State Normal School was established, its principal being made *ex-officio* State Superintendent of Schools.

In 1865, the State Board of Education was established and authorized to appoint a secretary who should discharge the duties of State Superintendent of Schools. The law constituting a Board of Trustees of the State Normal School was repealed and the supervision of the school transferred to the Board of Education.

In 1866, a law was passed allowing any town which should choose to do so, to abolish all its districts and return to the original plan of managing its schools townwise.

By the action of the General Assembly in 1867 the Normal School was suspended, but it was reëstablished in 1869.

The year 1868 should be ever a memorable one in the history of the public-school system of Connecticut; for in that year the "odious rate-bill," which had put a premium on absenteeism and pauperized the schools, was abolished. Then Connecticut came into line with the other States of New England, with nearly all the Northern States of the Union, with the most enlightened nations of Europe, and with the policy which had prevailed in the colony of New Haven more than two hundred years before, by making its schools absolutely free.

The foregoing is only an outline sketch of the history of the public-school system of the State. An attempt has been made to present merely its most prominent characteristics and the most important changes which have been made in it from time to time.

A study of the history of common schools shows that the principal aim of the fathers in establishing them was to baffle the "project of that old deluder Satan to keep men from the knowledge of the Scriptures." This is affirmed by the Connecticut colony in the code of 1650. In the same code, the provisions requiring parents and masters to see that children were educated, were based on the consideration that "the good education of children is of singular behoof and benefit to any commonwealth."

The New Haven colony, in 1641, established its public grammar school "for the better training up of youth that they may through God's blessing be fitted for public service in church or commonwealth." In the code of laws drawn up for that colony by Governor Eaton in 1655, the officers were enjoined to see that parents and masters endeavor that "all their children and apprentices, as they grow capable, may, through God's blessing, attain at least so much as to be able duly to read the Scriptures and other good and profitable books in the English tongue, and in some competent measure to understand the main grounds and principles of the Christian religion necessary to salvation."

For more than three quarters of a century there appears to have been no law relative to the inspection or supervision of schools. Being established for a religious purpose, their supervision was a regular part of the parochial duty of the clergy, and when, in 1714, the selectmen and civil authorities were required to visit and superintend the schools, it was that they might thus render them "most serviceable to the increase of that knowledge, civility, and religion which is designed in erecting them." Almost the same language in regard to the object of the schools is used in the revised statutes of 1750.

There is no doubt that for a long period the schools gave more instruction in manners, morals, and religion than in literature and science. The Testament and Psalter were reading-books, the Catechism a regular study, and the minister was the visitor and supervisor. In their establishment and in their operation for a century or more, the common schools were positively religious as well as literary in their aim.

It is far otherwise now. Creeds and catechisms have long since been banished from the public schools; and rightfully banished, as society is now constituted. The reading of the Bible, prayer, and devotional singing are still very generally retained. But many doubt the usefulness of these practices; some are calling for their abandonment, and the time may come when it will be thought right and necessary to withdraw all distinctively religious instruction and exercises from schools supported by general taxation. It is to be hoped that nothing of this kind will occur throughout the State; but even if it should, the public schools might, and doubtless would, be important agents in moral and religious culture. For their value in that direction does not depend mainly on the religious exercises in them, nor would it be lost if those exercises were given up. The moral influence of a school on its pupils is not in the formal exercises of the schoolroom, but in the character and example of the teacher. And it can hardly be doubted that the personal influence of the teachers in the public schools has been, and is, powerful for the promotion of good morals. For though too many teachers have little knowledge of the subjects to be taught, and of the laws which govern the physical, intellectual, and emotional natures of their pupils, and consequently work blindly and with poor results, their conscientious fidelity, patience, devotion, and self-denial must show their pupils that there are motives for the conduct of life higher than selfishness, avarice, or love of ease. The influence of such teachers cannot fail to be felt for good, and with or without formal religious exercises in the school, must be a constant force tending to moral and even religious culture.

THE THEORY, PRACTICE, AND PERMANENT RESULTS OF THE SENTENCE SYSTEM.

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The object of this article is to indicate a mode of professional investigation. All educational phenomena touch mind; or rather, all educational phenomena are phenomena of mind. He who would study the science and the art of teaching must turn his attention to the condition of the child's mind. It is idle to construct a system of subject-matter to be set before pupils, and then assume that it will be successful as a means to give to children intellectual power. It is quite unprofitable to discuss the merits and demerits of systems without the proper data of professional investigation; to wit, the facts of mind, the mental phenomena which are produced in the mind of the pupils who are taught under the systems.

All philosophical systems of subject-matter (improperly called methods) proceed upon some theory of securing to pupils permanent mental conditions. All intelligent teaching of these systems must proceed upon that theory and that practice which will induce in pupils those mental conditions and states which the systems contemplate. The science of teaching rests upon mental phenomena which the mind of pupils exhibits when it is under tuition and discipline; the art of teaching consists in professional skill to secure to pupils those forms of mental phenomena which constitute knowledge and power in them, not only now but during their subsequent life. It is not enough for the enlightened teacher to know that pupils have learned any subject-matter; he must know the condition of mind which his pupils have acquired while learning the matter. The pupils have run a race; are they supple, strong, and ambitious in conscious power at the end of the race? or are they maimed, stiffened, incapacitated for further tasks; disabled wrecks to float hereafter in the tides of human life, instead of sailing?

The objects of this paper are pursued by reviewing a system of subject-matter,—the sentence system of teaching reading,—not for its own sake, but because it is a system; and by examining critically the habits of mind which pupils acquire under the theory and practice of the system. The mode of treatment followed is applicable to any and all systems and practices, and indicates one of the provinces of professional investigation.

ELEMENTS OF THE STANDARD FOR MEASURING HABIT.

Values are estimated by standards which are similar in kind to that which is measured. When pupils are said to improve in their studies, what is the standard that measures the progress? Improvement in studies implies (1) that pupils make additions to the amount of knowledge which they possess when they begin their studies; and (2) that they acquire habits of mind, which are power, while they amass knowledge. Standards of knowledge are not difficult to establish; but standards of intellectual power are quite another affair. Power is manifested, the world over, by the amount of matter which is moved by it. Intellectual power is the product of intense and persistent thinking, which is a form of activity. To think is to move subject-matter which is in the mind; this matter is, for purposes of education, in the form of language. The unit of subject-matter is the word. He thinks who moves in his mind words over against each other, and compares them together, noticing critically similarities and differences which exist in the matter examined; he thinks who predicates inferences from the relations that he has discovered among things which he has compared. He thinks with greatest power who holds under control in consciousness for the longest time the greatest amount of matter, revolving it calmly and critically, and creating by his imagination the legitimate and logical inferences which the premises warrant. This conception of mental power is not difficult to understand when estimated by a standard of power. The standard of power includes two elements: (1) that of amount of matter which the mind retains under mastery, and (2) the length of time during which the mind can command the matter steadily by the energy of the will. Mental power has become habit, a product of repetition, when intellectual energy acts without conscious effort of the will; when the matter and the matter in motion are no longer strange to consciousness. This conception of habit clears the way to establish a standard of habit. The standard includes (1) the notion of matter; (2) the notion of continuous and steady action of the energy of will upon the matter; and (3) that the matter and the motion are not strange to consciousness. Stated more tersely, the standard to measure the value of habit is comprised of three conceptions: (1) subject-matter; (2) thought, which is matter in motion; (3) the unconsciousness of the effort.

CHARACTERISTICS OF HABIT.

The characteristics of habit should be examined critically in order to understand wherein it is power.

1. Under habit, thought moves at a maximum rate of motion, a maximum amount of matter, with a minimum effort of the will.

2. The effective working momentum of habit is always greatest in those forms of activity whose repetition transforms conscious volitional efforts into practically automatic action. But the power accumulated under one habit acts to some extent as a working momentum in other forms of mental energy.

3. Habit has inertia; it tends to move matter of thought uniformly in a certain direction or form of activity; *i. e.*, that form of activity by which the exertion of energy became habit. It requires active exercise of the will to break a habit, which is to say, to overcome the inertia of habit by diverting the energy of thought into other forms of action.

4. Habit arises out of two conditions of subject-matter: (1) The matter moved by thought may be uniform in quantity day after day; or (2) the matter may be increased by daily accretions. Habit acquired under the first condition is characterized by facility and rapidity; under the second condition it is marked by its power and accuracy, caused by the necessities which are laid upon the expenditure of energy in order to master steadily all the weight of the matter.

5. Habit is formed slowly and with pain when the matter to be moved by thought is too complex in its nature, because volitional energy is consumed to so great an extent to direct the form of the activity that the power itself receives too little effective impetus to increase it rapidly. This is true in particular when thought is required to struggle with weighty subject-matter, in contrast to mere acts of memory, or to acts of perception.

HABIT AS IT IS ACQUIRED IN LEARNING TO READ.

What is the problem of teaching children to read? The child begins his career at school when he is five years old; his perceptive faculties are acute; his memory is active and tenacious; his reasoning faculty is fairly well germinated; his speech is respectable for the extent of its vocabulary, and for its flency; in brief, he knows something and can talk. If this child lived in a land where there was no written language he would never have to learn to read; he would learn to talk, and he might become very learned as a scholar. That children have to learn to read is the accident in their educational career which arises out of the necessities of environment. What, then, does environment demand of children? It demands with true utilitarian purpose that children shall become familiar with the forms and uses of the implements which they must use in the duties of life. Among these implements there may be a sewing-machine, or there may be written language,—both accidents of civilization. If the sewing-machine, the child must learn to use it? Why does he learn to use it? In order that he may avail himself of the utilitarian advantages and power which reside in the machine. That is to say, his act of learning the forms, structure, and purposes of the machine is very different in its aim from the act of using it after he knows how to manipulate it. As with the machine, so with written forms of language; the pupil learns them in order that he may subsequently use them for their practical utility. The subject-matter is not new to him, which he handles in the act of learning to read,—simply the form of it is strange, for he reads nothing which he has not known previously in speech. Whence, the problem of teaching children to read is that of teaching them to understand and use that knowledge which they now possess as speech, when it appears in the form of written language. Syntax, concord, government, etymology, belong to speech; marks of punctuation, marks of rhetoric, the division of sentences into words, and capital letters, belong to the fashion of written language. Learning to read involves the necessary condition of being supplied with the means of conquering unaided the new words which meet so suddenly the pupil as he advances into new texts. The pupil must know the names and powers of the letters of the alphabet before he can be said to have learned to read. That pupil can read earliest and most intelligently who has earliest learned to conquer new words; *i. e.*, who has mastered the means or instruments of progress. As single objects are the units of knowledge, so are words (the mental matter of objects) which are the forms of knowledge, the units of speech and of written language.

CRITICAL EXAMINATION OF THE SENTENCE SYSTEM.

The foregoing discussion prepares the way to examine critically one of the systems which are called popularly "Advanced Methods" of teaching pupils to read. Among these systems is that which is designated the "Sentence Method," or the "Thought and Sentence Method." This system proceeds on the theory that the ultimate unit of thought is a sentence; that the pupil observes an object and has some thought predicated upon his experience with it; that the true test of his knowledge of the sentence is his ability to verify the statement by referring to such objects and relations of objects as the sentence indicates; that the attention of the child should not be embarrassed by spelling, by names of letters, or by powers of letters; that words which are new to the child must be learned by incorporating them in sentences which the child has read; that the pupil learns to write words and sentences by writing them as wholes, that pupils should utter sentences aloud only after they know their meaning. In its practice the system proceeds by the teacher "developing the idea," and writing, with proper capitals and punctuation-marks, in script, upon the board, a simple sentence after the pupil has seen the object (toy or real) to which it relates; *e. g.*, "I see a top." The top being in sight, the pupil moves rapidly the pointer over the sentence, and as rapidly utters it aloud as a whole. The teacher writes other sentences; the pupil shows his general understanding of each sentence by selecting, before he utters it aloud, the object (or toy) or relation of objects (toys) to which it relates; he then points to the sentence, and pronounces it as he comprehends it. The sentences are reviewed until the child has learned to recognize them at sight; he writes the words and the sentences on the slate. In time the pupils will write original compositions. This course is pursued for some time, when books are put into the hands of pupils, and they learn to read printed forms in addition to the script.

The following statistics show how the system works practically: The primary pupils of the lowest grade of a ward school averaged a little over seven years old when the examinations were made; the children had been in school 70 weeks, or 1¾ school-years; they had been taught sentences from the board 50 weeks, 1¼ school-years; by estimate of the teacher, who was an expert in the system, the pupils had had presented to them from 500 to 1000 words, all of them in sentences; the children had been 20 weeks, ½ of a school-year, in the first (Monroe's) reader, and had read 38 pages of it,—the result of 1¾ school-years spent in learning to read. The pupils had not been taught the names of the letters of the alphabet, or the powers of the letters; they had had no exercises in spelling, unless to write words as wholes is called spelling; they had no power to decipher a strange word unless the teacher "developed the idea," and wrote it as a part of an otherwise familiar sentence; they read sentences frequently by dropping out words that belonged to them, or they interpolated words, or they used other words for those written in the sentences.

These statistics reveal the habit of mind which the pupils had acquired, and test the value of the system. The pupils possessed independently no means by which they could conquer new words; this condition of mind left them conscious of dependence on the teacher; this consciousness of weakness made them in habit either timid or reckless. The pupils were not habitually critical to read the exact words of the text which was set for them to read. This habit was fatal to thoroughness in any subject which was in the form of written language, for the pupils were quite unable to appreciate the force of words when they were attempting to interpret the meaning of a sentence; besides, habit of the vision was uncertainty, as that sense failed to recognize critically the forms of words. This habit of uncertainty in calling words correctly is subversive of accuracy in both sensuous impressions and in thought; for when a pupil looks at one sentence upon the board, and pronounces aloud another sentence, unconscious of the error, he cannot be called accurate. To illustrate: The teacher wrote, "The doll goes to sleep in her cradle," and the pupil read it, "The doll goes to sleep in her carriage;" the teacher wrote, "I have a little white dog;" the child read it, "I have a little dog." Errors of this general nature are not infrequent (even in upper grades), and the theory of the system and the practice of the teaching holds that such utterances by pupils constitute good reading, because the "pupil has the thought."

The system and the practice use toys for objects to give to the pupils a knowledge of material things about them, as horses, utensils, and the like. This practice builds up in the mind of the child a superstructure of knowledge which rests largely upon intuitions, percepts, sensuous impressions, that are far from those which constitute the true basis of sound knowledge. For the very essence of intellectual power is the integrity of sensuous impressions. A child whose sensuous impressions of horse are those which he has obtained from seeing a toy-horse are as wide of truth as error is from fact, for the foundations of intellectual growth are falsehood. This condition of teaching makes the pupil acquire a habit of mind that not only tolerates error, but that endows error with all the sanctity of truth; a child with this habit cannot discriminate the beautiful, the true, and the good. No mind can ever rise to its exalted privileges in knowledge and power unless its sensuous impressions of the material world are truth.

The system does not enforce upon pupils a rapid increase in their knowledge of words. This fact is important, for the vocabulary which a child commands intelligently determines the educational value of the sensuous impressions, intuitions, percepts, which he experiences. Children, like primitive peoples, imitate sounds and motions when they attempt to describe them, because they lack an adequate vocabulary to describe them; they do not know things when they are in the form of words. Two persons may see the same object under the same external relation; other things being as equal as possible, he who is master of the most extensive vocabulary (special and general) will see most critically, extensively, and truly, the object which stands in their vision. The Hidatsas called copper "stone red" when they saw it the first time, and iron "stone black"; their limited vocabulary prevented the expansion of knowledge which they could have gained by sensuous impressions had their vocabulary been more extensive.

The system proceeds upon the theory that pupils are to learn the meaning of words from learning first the meaning of the sentence as a whole. That is to say, that the child learns the matter of words by and through his knowledge of the sentence which contains them If any one holds to that theory, let him test it by this sentence from Sir Henry Maine (Anc. Law, pp. 8–14): "Kings had a stole of Themistes at hand ready for use." On the other hand, the sentence as a whole is that which determines often which particular meaning of any of its words is used therein. But this is as far as the sentence conveys critical aid. The habit of mind is timid and feeble which pupils acquire who are taught to depend upon comprehending the sentence as a preparation to know the meaning of its words; pupils fail to become powerful to think, because they are conscious of their deficiencies in a knowledge of the constituent elements of sentences.

Teaching sentences before teaching words, gives to pupils a sentence as a whole, and thus they acquire no habit or power to determine the key-word upon which the meaning of the entire sentence so often hangs. The child, when learning to read, utters the sentence with great rapidity,—indeed, the sentence is to the pupil one long polysyllable, made continuous by hyphens; as, "I see a top" is to the pupil, "I-see-a-top;" the several successive words are quite as meaningless to the child as the several syllables are to an illiterate adult in the word "val-e-tu-di-na-ri-an"; or, as the several words are to the savage in the sentence, "My-mother-child-female," which the Mandigo boy utters when he wishes to say "sister." Pupils may pronounce with expression sentences which are pollysyllables to them, and yet may not realize the power of this or that word in the sentence as it stands related to the other words of the sentence. Pupils who are in the case described above are wanting in power to interpret intelligently sentences which they utter; they are dependent and timid; or they are indifferent as to accuracy, and addicted to reckless guessing; they lack power of application,

The foregoing discussion has proceeded from the psychological phases of the case as the system affected habits of mind of pupils in the lower grades. The investigations into habit were continued up the grades, and showed the following results: In searching for the primary cause why pupils experienced so great difficulty to handle intelligently matter when in the form of a text, the teachers reported that the pupils in the second, third, fourth, fifth, sixth, and seventh grades (trained under this system), seemed to stumble because they lacked familiarity with words; pupils in the ninth grade (ninth year in school) were reported as failing to catch the key-word in sentences. In examining into the proficiency which pupils displayed to study unaided by the teacher, it was found that the fourth, fifth, sixth, and seventh grades exhibited serious deficiencies. The same grades exhibited a very noticeable and characteristic incapacity when pupils were required to think independently; they were too helpless with the matter that was set to them in the form of a text. Pupils in the second and third grades experienced the gravest difficulties when they attempted to spell words which they knew by sound.

The following quotations from reports of teachers will point more definitely to the mental condition of the pupils who were under examination: "Pupils in the fourth grade seem incapable of reading an example in arithmetic understandingly; they will learn a definition much more readily from the board than from their books; pupils will take a book and work five examples, and not have one right; send them to the board and read the examples to them, when every one will be worked correctly by the pupils. Pupils will not read a sentence unless they glance over the sentence first; and when they are questioned about the meaning of the words, they will be found to be entirely ignorant of any meaning of the words. Pupils do not know how to pronounce new words, or how to attempt it. Better work is accomplished by pupils who spell and define words. Some will read a sentence, giving good expression, and yet be entirely ignorant of the sense."

It may be remarked incidentally that the habit of mind which is confirmed by composition-writing, is quite different from that which is required to interpret critically a text. The first is an act of selection and synthesis; the latter is an act of analysis, comparison, and inference.

This investigation of the theory, practice, and permanent results of the sentence-system of teaching children to read indicates to the profession the value of said system. This value has been measured by the habit of mind which the system develops in pupils. The habits enumerated and indicated tell their own moral when judged by the characteristics of habit. Systems of instruction are powers to form habits in the mind of pupils, which are quite independent of those which mark the personality of the teacher of the system. Habits of mind acquired by pupils are the test of the value of theories and practices of teaching. This inquiry indicates a mode of professional study to test the value of any system.

WOMEN'S EDUCATION.

BY CHARLES F. THWING.

That women should receive an education, that women should receive as broad and thorough an education as is possible, is a proposition that no longer requires discussion. The questions which, in the present state of public opinion, demand consideration relate to the peculiar kind of intellectual training which women should receive, and to the condition under which this training should be given.

It is not proposed in this article to discuss either the general theory of women's education or to present a summary of the facts regarding the applications of any theory. The purpose is to offer certain considerations, derived chiefly from experience, relative to the education of young women, that tend to prove the wisdom of that method usually known as co-education. And yet it is to be premised that co-education is not an end sought for its own sake. The ultimate aim is to give young women advantages of intellectual culture as liberal as are afforded to young men. Since the large proportion of the institutions which are most fully equipped for furnishing these advantages are now monopolized by the students of one sex, and since it is not possible to establish institutions as fully equipped for the use of young women alone, it is urged that they should be received into institutions already existing. Co-education is simply the stairway leading to the opportunity for the noblest and highest culture. It should, therefore, be open for those who wish to use it.

It is still further to be premised that the colleges for women, of recent establishment,—as Vassar, Smith, Wellesley,—afford excellent opportunities for intellectual training. The courses of instruction which they provide are many and diverse. Their professors are learned, able, and not a few are also distinguished for scholarship and original research. But the fact that they are so thoroughly equipped for their work furnishes no conclusive argument against opening other institutions, even more thoroughly equipped, to women as well as to men.

The subject of co-education has now gathered about itself a large amount of what may be termed experience. The reasons for and against this system of training are no longer *à priori* only. The nearly fifty years in which this system has been practiced to a greater or less extent have resulted in an accumulation of facts that are of great value in determining the expediency of this method of intellectual discipline. Regarding the worth of this system, educators hold theories most diverse. These theories are, of course, of use,—in cases, of the most abundant use; but they are of comparatively small use in respect to those points of inquiry in which actual experience has proved either their narrowness or their superiority. The system of co-education was introduced into the University of Michigan after a period of thirty years in which this justly famous institution had devoted itself to the training of young men exclusively. Before reaching the decision of opening its doors to young women, it sought advice from the most distinguished educators. Several of the opinions thus evoked were of those who had made no trial of co-education, and their opinions were, with scarcely an exception, antagonistic to the movement. Some said it would be "demoralizing"; some feared it would result in a "corruption of manners and morals"; some argued that "the delicacy of female character would be destroyed"; some apprehended serious weakening of the health of female students. But the doors were opened. The experiment was tried. For more than a decade the system has been pursued, and none of these evils that were prophesied have occurred as the result of co-education.

A reason for co-education that might be urged in advance of any trial of the system, and yet one which practice has found to be valid, is its economy of means and forces. A professor can lecture to a hundred as well as to fifty students. Libraries and laboratories once established can be used by a larger number without a correspondingly larger expense. It is this fact of economy to which President Eliot refers when, in expressing his opinion that young men and women from fifteen to twenty years of age are not "best educated in intimate association," he yet acknowledges that this "method may nevertheless be justifiable in a community which cannot afford anything better."

Not seldom is it asserted that colleges educate their students away from and above the life which the majority will be obliged to follow. Without acknowledging the truth of the remark, it is yet clear that there is less peril of this result under the method of co-education. For students are thus kept citizens of a collegiate world which is more similar to the active world in which, after graduation, they will live. The testimony of President Fairchild of Oberlin College upon this point, as upon all points regarding co-education, is of great worth. He writes:

> "It can hardly be doubted that young people educated under such conditions are kept in harmony with society at large, and are prepared to appreciate the responsibilities of life, and to enter upon its work. They will not lack sympathy with the popular feeling, or an apprehension of the common interests. They are naturally educated in relation with the work of life, and will not require a readjustment. This seems a matter of grave importance, and we can scarcely be mistaken as to the happy results attained. If we are not utterly deceived by our position, our students naturally and readily find their work in the work in the world, because they have been trained in sympathy with the world."[1]

The question of the health of women who pursue a course of study on the same terms as men is of extreme importance. The argument of Dr. Edward H. Clarke in his *Sex in Education*; *or, a Fair Chance for the Girls*, would tend to show the inexpediency of subjecting women to that method of intellectual training which men pursue. But testimonies collected from many institutions in which the method has had a long and fair trial form the strongest evidence for a contrary conclusion.

In 1882 the President of Oberlin College writes as follows:

> "Our impression has been, from a general observation of the facts, that our young women endure the strain of a course of study as well as the young men; *i. e.*, where they have had the same or equal preparation. In the case of young women who come into the advanced literary and philosophical studies of the course, without the full discipline of previous classiccal study, there are indications of nervous anxiety at times, which is undesirable and unwholesome. Hitherto, our arrangement of courses has brought young women into these advanced classes under this disadvantage. They have held their place in scholarship, but not always in health. My personal opinion is that the apprehension of failure in the class-room takes a stronger hold upon young women than young men. The young women are in general very sensitive about falling behind."[2]

President Angell of Michigan University bore the following explicit and comprehensive testimony: "Women have been here since 1870, and have done every kind of work successfully and without injury to character or health."[3]

Professor Lee of St. Lawrence University writes, in 1882:

> "Our College has been in operation for seventeen years. The proportion of male and female students has been about as two to one,—that is, one-third ladies.

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[1] Orton's *Liberal Education of Women*, p. 245.

[2] EDUCATION, Vol. III., No. 5, p. 506.

[3] Ibid., p. 509.

"Their mental and physical condition when they entered was about the same as other young ladies of the same age and social position, though probably in most cases a little better. Their health had generally been good, and their mental training not very systematic or extensive. On entering college they are put down to hard and systematic work, and kept so all through the four years' course.

"Their health has generally improved during their college course. There have been exceptions, but these have been few. Systematic study has tended to improve their health. We have had but one death among the lady students while they were connected with the college, and very little sickness. At the close of their college course they have appeared healthy and robust, and have entered upon their work of teaching or other occupations requiring mental exertion, with every prospect of holding out well, also, as to scholarship and in the higher branches.—as Latin, Greek, political economy, the calculus, mental and moral philosophy,—have ranked as high as the gentlemen, and in some cases higher.

"I cannot say that there is any great difference in the effect of study and exercise upon the male and female students. Neither seem to be injured at all by continuous study. Both are made stronger in body and mind. I may also add that the mental occupations upon which our graduates enter after leaving our college tend to increase the strength and activity of body and mind of the lady students."[1]

President Bascom of University of Wisconsin, after making a thorough study of this question, thus writes in a recent report:

"Though my conviction has been, previous to the report, that the health of the young women, as a whole, was *better* than that of the young men, and that there were striking instances of graduation with robust strength, I am striving to test this opinion by facts, so far with the following results. All excuses for ill-health are given by me. The exact number of students in our collegiate and dependent courses is 357. Of this number 93 are young women,—a trifle more than one-quarter. During the past eight weeks, the most trying weeks in the year for students, there have been 155 days of absence from ill-health on the part of young men, and 18 on the part of young women. The young women should have lost, according to their numbers, 54 days, or three times as many as they have actually lost. The students were not aware that any such registration was being made. It may be felt that the young men are less conscientious in pleading ill-health than the young women, and this is doubtless true; but I sharply question a young man, and rarely ask any questions of a young women. I explain the facts in this way. The young men are not accustomed to confinement, and though sun-browned and apparently robust, they do not endure the violent transition as well as women. Study is more congenial to the habits of young women, and the visiting committee are certainly mistaken in supposing that they have to work harder in accomplishing their tasks. *The reverse is true.* In addition to the above bill of ill-health against the young men, a correspondingly large number of them have been compelled, from the same cause, to leave the University altogether.

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[1] Ibid., p. 506.

"A second showing of the registration, which I had not contemplated, but one very interesting, is this: the absences of the young women are almost exclusively in the lower classes. Of the eighteen, two are in the Sub-Freshman, fourteen in the Freshman, one in the Sophomore, one in the Junior, and none in the Senior. The absences of the young men are evenly distributed, on the other hand, through the entire course. The young women do not, then, seem to deteriorate with us in health, but *quite the opposite.* I do not belong to the number of those who set lightly by health, —I would not sacrifice any measure of it for scholarship; but it has long seemed to me plain that a young woman who withdraws herself from society and gives herself judiciously to a college course is far *better* circumstanced in reference to health than the great majority of her sex." [1]

These testimonies might be multiplied, but sufficient have been adduced to prove that women entering college as well fitted as men, under conditions as favorable to the preservation of health as those under which men are placed, graduate with constitutions as vigorous as those of the men. Indeed, the evidence indicates that the physical vigor of women constantly increases throughout the college course. The scholarship of the women, moreover, is excellent. They maintain at least as high a rank as their brother-students. The fear that their admission would lower the scholastic dividends has proved to be utterly without foundation. In the public schools it is generally acknowledged that girls are better scholars than boys. The same relative standing continues in the college. It is, however, to be said that the natural ability of the young women is probably higher than that of the young men; for only the women of intellectual natures seek a collegiate training, and young men of all grades of ability go, or are driven, to college. In reference to this question of scholsrship President White of Cornell University wrote at a time when, under the proposed opening of that University to women. he was studying the system of co-education in other colleges:

"If it be said that the presence of women will tend to lower the standard of scholarship, or at all events to keep the Faculty from steadily raising it, it may be answered at once that all the facts observed are in opposition to this view. The letters received by the Committee, and their own recent observations in the class-rooms, show beyond a doubt that the young women are at least equals of the young men in collegiate studies. As already stated, the best Greek scholar among the thirteen hundred students of the University of Michigan, a few years since, the best mathematical scholar in one of the largest classes of that institution to-day, and several among the highest in natural science and in the general courses of study, are young women.

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[1] Ibid. quoted, p. 509–10.

"It has been argued that the want of accuracy and point, the 'sloppiness' of much of the scholarship in some of the newer colleges, is due to the admission of women. The facts observed by the Committee seem to prove that this argument is based on the mistake of concomitancy for cause. If 'sloppiness' and want of point are inadmissible anywhere, it is in translation from the more vigorous and concise ancient and modern authors. Now, the most concise and vigorous rendering from the most concise and vigorous of all,—Tacitus himself,—was given by a young lady at Oberlin College. Nor did the Committee notice any better work in the most difficult of the great modern languages than that of some young women at Antioch College."

The long and varied experience of the president of Oberlin College is in the line of President White's observation. Dr. Fairchild remarks:

"We find no difference in ability to maintain themselves [women students] in the recitation-room. Under the circumstances, I shall be excused for referring to my own individual experience, which has been somewhat varied. The first eight years of my work as a teacher was in the department of the ancient languages,—Latin, Greek, and Hebrew,—the next eleven in mathematics, abstract and applied; the last eight in philosophical and ethical studies. In all these studies my classes have included young women as well as young men, and I have never observed any difference between them in performance in the recitation. The strong and the weak scholars are equally distributed between the sexes.

"In this statement I do not imply that I see no difference between the normal male and female mind as to taste for particular studies. I have no doubt of the existence of such differences; but they do not appear in the the ability as pupils to comprehend and express the truth. A few days since, on a visit to the University of Michigan, I attended a recitation in Thucydides. So far as could be judged from a single exercise, in which there were many excellent performances, the daughter of the Professor of Greek, the only young lady under the wing of the University, led the class. But it did not strike me as an anomaly; I had often seen such things."

President Edward Orton, of Antioch College, bears similar testimony:

"As to the intellectual result of co-education, I have seen nothing to warrant the belief that the general average of scholarship is lowered by it.

> Young women, as we find them, have not the same powers of endurance, in severe and protracted study, that young men have; but, on the other hand, they do much of their work with greater facility. In the languages, in rhetoric, and belles-lettres, for instance, they are apter pupils than their brothers. Perhaps we do not find them as strong or original mathematicians as young men, but still it must be said that if the two most successful scholars of the last seven years, with us, were to be named in this department both sexes would be represented. They recite what they know better, on the average, than young men. The sexes seem to take different results from the same course. The philosophic phases of a subject always seem to me to take deeper hold of young men. They have "Darwinism," for instance, harder. It seems to me that a more symmetrical view is ob-obtained when a subject has been brought under both points of vision."[1]

A member of the St. Lawrence University, of New York, writes in reference to the women students, that "their average proficiency in all studies is quite as high as that of the young men";[2] and President Magoun of Iowa College has likewise affirmed: "It has not been found that young ladies, *equally prepared*, were at all behind young men, in the more difficult college duties,—mathematics, languages, science, or philosophy."[3]

The evidence is, therefore, abundant and explicit that the scholarship of the women is as high as the scholarship of the men in a college which admits both sexes. But intellectual training is of small worth in comparison with moral culture. What, then, are the results of co-education in the domain of personal character? Have immoralities prevailed? Has woman become mannish? Has the peach been made to lose its bloom? Have the reserve, the delicacy, the tenderness,—qualities that are the special adornment of womanhood,—been sacrificed or even impaired? The testimony is unanimous in the negative. President White, in the paper from which an extract has already been made, writes:

> "That there may be some danger to certain classes of women. shallow in character and weak in mind, is not unlikely, but of all women these are the least likely to involve themselves in the labor of preparation for the university or of going on with its courses of study. As to the good effect on the women who have actually entered the colleges, the testimony is ample. The Committee, in its visits, found no opposing statement either from college officers, students of either sex, or citizens of university towns, and all their observations failed to detect any symptoms of any loss of the distinctive womanly qualities so highly prized. Nor have they found that those who have been thus educated have shown any lack of these qualities

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[1] Ibid, p. 270-71. [2] Old and New, Vol. IV., p. 129. [3] Ibid., p. 760.

in after-life. On the contrary, it would be hard to find a body of women combining these qualities more nobly than the matrons of this State and surrounding States who have graduated at the academies and normal schools. These qualities they have, by the agreement of all observers, in a very much higher degree than the women of countries where a semi-conventual system of education is adopted."[1]

Six years after Cornell University was opened to women it was affirmed, it is worthy to note, by one of its members, that "the whole tone of the University has greatly improved."[2]

The testimony of President Fairchild is no less explicit:

"You would know whether the result with us has been a large accession to the numbers of coarse, 'strong-minded' women in the offensive sense of the word; and I say without hesitation that I do not know of a single instance of such a product as the result of our system of education. To show that our system of education does not bewilder woman with a vain ambition, or tend to turn her aside from the work which God has impressed upon her whole constitution, I may state that of the eighty-four ladies that have taken the college course twenty-seven only are unmarried. Of these twenty-seven, *four* died early, and of the remaining twenty-three, twenty are graduates of less than six years' standing. The statistics of the graduates of the Ladies' Course would give essentially the same result."[3]

Similar sentiments have been expressed by Horace Mann and Mrs. Mann, regarding the college of which he was the first president. President Canfield of the University of Kansas writes that there have passed "sixteen years of radical co-education without a whisper of scandal."[4] The president of Butler University, Indiana, says:

"Let me assure you that a better set of students than ours it would be difficult to find. *On no occasion whatever has discipline been made necessary by the association of the sexes.* Our students are gentle and modest on the one hand, polite and gallant on the other, while on both they are attentive, industrious, and obedient."[5]

Many testimonies of a general character in favor of the system might be presented. They refer, in part, to points already discussed. The president of the University of Michigan says:

"Women graduates are doing their full part in winning a reputation for Michigan University, and are justifying the wisdom of the Regents who opened to them the opportunities for a thorough classical training."[6]

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[1] Orton's *Liberal Education of Women*, p. 219–20.

[2] Ibid., p. 249–50,

[3] Report of the Mass. Society for the University Education of Women, 1880, p. 18.

[4] *The Nation*, No. 932, p. 401.

[5] Report of the Mass. Society for the University Education of Women, 1880, p. 20.

[6] Ibid., p. 18.

The president of the University of Wisconsin also writes:

> "After an experience of ten years in large college-classes, I am more than convinced of the suitableness of co-education: I believe it to be preëminently the fitting method of training our youth. I can only briefly indicate my reasons.
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> The fears so often expressed in reference to its effects on manners, on health, on the standard of scholarship, on the type of female character, have not been found by me to be true, but quite the reverse of the truth. On the other hand, this method gives a vigor, insight, and scope to higher education not attainable under the narrower conditions of sexual division. It is impossible to secure breadth without breadth.
>
> Both men and women should encounter the conditions of life in regular sequence as they arise. A period of seclusion is no preparation for new, closer, and more responsible contact. It is very pitiful that some *doctrinaire* should have the power to prepare for women a private regimen that excludes a portion of the most weighty conditions and influences of that life which we have actually to encounter.
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> While much may be said in behalf of one, two, or three colleges recently provided for women, most of the instruction furnished them is, and will remain, greatly inferior to that offered to young men. Even the best of this instruction is inferior in the scope of its influence to that furnished in our older institutions, which have behind them the gathered force of our national life It is uneconomical in theory and impossible in practice, to provide a second series of colleges equal in extension and educational force to those already in existence.
>
> Seclusion in the education of women means weakness, and weakness means continued subjection to a faulty conventional sentiment; seclusion means inferiority, and this inferiority is not to be measured by the distance between the best institutions open respectively to young men and young women, but by the distance from center to center, the difference of the average work in the two directions."[1]

The President of Boston University affirms the satisfactory character of the results of co-education in the institution which he serves. When the present president of Columbia College was the chief executive officer of the University of Alabama, at Tuscaloosa, it was his custom to invite the attendance on his lectures of young women from a neighboring female seminary. The effect of this association upon the manners of the young men was most advantageous, and the results were so satisfactory that the example was followed by other officers of the University.

The results of the system generally known as the "Harvard Annex," as far as they have any bearing upon this question, are in favor of co-education. This system is simply that the professors of the University are teaching private classes of young women in the college studies. In speaking of this system the Rev. Prof. A. P. Peabody has said:

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[1] *The Critic*, No. 66, p. 154-5.

> "I can see no reason why young men and young women may not study and recite together as well as talk, sing, and dance together. The reason usually given why they should not is purely a relic of some tradition, the reason for which has been entirely lost to the memory of man. When we think that they are to be together in the building, the most innocent and fitting of all associations would seem to be an association in the very highest pursuits, next to their eternal well-being, in which they can be engaged. There is no reason why association in this matter should be postponed."

Although Columbia College, despite the recommendations of its president, refuses to admit women to its classes it has yet provided an arrangement which offers even more advantages than the Harvard Annex. The officers of the college examine women for entrance to a four-year course of duty, prescribe this course, which for the first two years is obligatory, and for the second two elective; examine students; and at the close grant a certificate which stands in the place of a degree. This system is inaugurated in the college year of 1883–84. Neither its details nor its results are at present known. But the fact indicates at least progress in the provisions for the higher education of women; and in the view of many it shows an advance toward the introduction of co-education into this most conservative institution.

The scope of this paper fails to permit extended reference to the education of European women. England has four universities of ancient establishment,—Oxford, Cambridge, London, and Durham. Professors at Oxford have admitted women to their lectures, and Somerville College and Lady Margaret Hall have recently been opened for the special use of female students. Cambridge admits women to its Honor examinations; and its professors instruct the students of Girton College and Newnham Hall. London University admits women to degrees and to honors on the same terms as men; and Durham University grants to them degrees in arts.

From the seventh to the fifteenth century English women received precisely the same education as English men. It was not till the convent schools were swept away in the sixteenth century that they were denied those educational facilities which the last quarter of the nineteenth century is restoring.

MANUAL TRAINING IN THE PUBLIC SCHOOLS.

BY RAY GREENE HULING, A.M.

A common vocabulary is a great help to clearness of thinking, when views upon any subject are interchanged. Let us, therefore, set out in the present discussion with a mutual agreement as to the meaning of a few terms which are sometimes rather carelessly used in remarks upon the matter in hand. They are industrial education, technical education, "handwork schools," "the creative method," and manual training.

Industrial education should mean the process of preparation for some special form of manual labor. It takes the child at a proper age, supplies him with suitable material and instruction, and, in time, sends him forth to do by himself the work of a carpenter, a machinist, or some other artisan. Formerly, the system of apprenticeship afforded ample means of obtaining such an education; now that that custom has fallen into less frequent use, it is not clear what there is for the great body of workingmen to supply its place. The State has an assured right to provide education of this sort, and Massachusetts is doing it by the State Agricultural College at Amherst, as well as in all its penal institutions which aim at reformation, and not simply at detention and punishment. The several towns and cities, also, since 1872 have enjoyed the legal right[1] to maintain schools for industrial education, but I am not aware that any are now using the privilege. While, therefore, right in itself and permissible by statute, such education, having for its object preparation for some special employment, is not a desirable addition to our public school system; for no form of employment is so universal in application that it can fairly ask the public to supply vacancies in its ranks, while other occupations are less favored. Moreover, the State would violate the rights of children should it venture to prescribe during the school age their future avocation. I am by no means, then, prepared to advocate the introduction of industrial education, as I have defined the term, into the public school.

Technical education, so far as I have observed the use of the expression, seems to be employed with reference to the higher grades of industrial education, especially when combined with instruction in mathematics and natural science. It is the kind of work done at the Institute of Technology in Boston and at the Free Institute in Worcester, Mass. Until taxation ceases to be less burdensome, and private enterprise and munificence fail to provide adequate opportunities for it, the State need do nothing more than, in specially-deserving cases, extend an encouraging hand to individual effort. There is no proper place for it in the common schools.

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[1] Public Statutes of Massachusetts; chap. 44, sec. 8,

The term "handwork schools" is a near equivalent to express the Swedish idea, "Slöjd schools," yet for our purpose it is somewhat misleading. It very naturally implies that handwork is the main feature of a school bearing this title. Such schools are not, I think, what our communities need. If handwork is, on the other hand, to be only a minor element in our educational system, some other mode of presenting the idea is preferable.

"The creative method in education" is a term recently suggested by Prof. Felix Adler in describing the central idea of the Workingman's School in New York city. The idea is excellent, and the phrase an attractive one, yet faulty in being too comprehensive to suggest handwork alone. It properly includes all educational processes which employ invention. Creation, in any sense in which it can be predicated of humanity, may be accomplished by the mind as well as by the hand. We use the creative method, I think, whenever we lead a pupil to invent a mathematical problem, present an original design, or even write an original composition. Let us hope that in most of the public schools creative methods have long been introduced.

To express my own conception of what in the premises is needed in school, I prefer the term Manual Training, and I mean by it systematic instruction and practice in the use of such tools and on such materials as will impart skill to the eye and to the hand. My present purpose is to consider, first, whether such training ought, of itself, to have a place in the public school; and, secondly, whether its introduction is practicable.

What reason, then, has this new applicant to urge why our already crowded school system should grant its appeal for admission? I answer, it appears to be a valuable means of accomplishing the ends for which that system has been established. And what are these ends? The following statement of them occurs in a recent report of a committee of the Mass. State Board of Education, and seems to be adequate: "The object of our public schools, as they now are and should be conducted, is to give a general preparation for the duties of life without reference to any particular avocation." Such general preparation, I believe, should be harmonious, and comprehensive of all the activities of the child; that is, it should tend to prepare him physically, mentally, and morally for his position as an adult human being. The public school alone cannot be expected to do all such preparatory work. Its main province is to develop and train the intellect, yet it must not retard the body or the moral faculty in their growth. It is by the home chiefly that the body must be brought to its maturity of development; the church must coöperate with the home in teaching and enforcing morals and religion. Nevertheless the school can, without cessation of its distinctive line of operation, contribute much to bodily culture and very much to moral culture; and if it can, by the laws of responsibility it ought so to do. Nor will it lose at all by the effort, for so subtle and necessary is the mysterious bond between the body and the mind that cultivation of the one has a reflex action worthy of remark upon the other.

Manual training is, to be sure, a part of physical education. Its end is to make the hand an obedient and ready servant of the will. This wonderful combination of bones and sinews, which nature has furnished in perfection to no other of her creatures, is subject to the same laws of growth as all other parts of the human organism,—physical and mental. It will do best what the will has caused it to do most frequently, at times when its possibilities were most available. It is capable of education, and there is a best time for that education to begin and to continue.

Training of the hand begins, of course, with the infant long before Pract the home turns its possessor over to the school. It is carried on by the home and by the kindergarten, whenever the latter is available,—as may it speedily be all over our land,—until five or six years of practice have ensued. Then the public school begins its service, teaching the child the use of two or three implements,—the pencil, the crayon, and the pen. In process of time he attains to a practical readiness in the use of them. Manual training has thus already obtained a foothold in our public schools, and to this limited extent is highly esteemed because of its practical value. No one thinks of dislodging writing, and rarely any one drawing, from the plan of education. Moreover, the advocates of the teaching of the latter claim,—and many a teacher can testify to the truth of it,—that drawing aids the student otherwise than as recording his thought; for it renders distinct perceptions and conceptions which would, without it, be vague; it develops perception of form, size, and proportion; it corrects misapprehension as to position and shades. In short, it trains the sense of sight, and the faculties which use the deliverances of that sense. This is only illustrating the larger idea that manual training is a means of mental training. I need not mention the æsthetic culture proceeding from drawing, save to suggest that this is another phase of mind-growth.

The reader may now be prepared to understand my meaning when I claim, as an important argument for manual training, that every step in hand-culture involves a corresponding increase of brain-culture,—the distinctive work of the public school. Being so with the pencil, how can it be otherwise when some cutting-tool is employed, and when wood succeeds paper as the material. The mental process is much the same, whatever the hand finds to work upon and with. Froebel understood this, and planned to train the little minds by directing the joyous activities of the hands. Nor does any educator deny that skillful kindergartners accomplish that result. Why should we not utilize the principle in the instruction of older pupils extending its field beyond the pen and pencil to other tools?

To be certain of our ground as to the reciprocal influence between hand and brain, let us call in the evidence of the physiologist. Dr. William B. Carpenter of London, in a conversation with Mr. James A. Page of Boston, last August, was very distinct and emphatic on the intellectual value of manual training. He thought that the cultivated hand had by reflex action great influence on the brain, its power, energy, development, and perhaps the very arrangement of its fibers. He further said that Sir Charles Bell, author of the Bridgewater Treatise on the hand, took the same ground. Mr. Page, in his report of the Dwight School experiment, adds that both these gentlemen believe that there can be no thoroughly clear, vigorous, and enlightened brain without the cultivated hand. If this strong statement is true, manual training cannot be neglected in any adequate system of education.

In what particular respects is hand-work thus helpful to the mind? Can ordinary thinkers discern the separate steps? Let us see. Take a simple course in carpentry, such as that pursued at the Dwight school in Boston a portion of last year. The chief tools are the hammer, the plane, the saw, the square, the chisel, the bit, and the auger. The uses of glue and sandpaper were also taught. The pupils are led to make accurately, neatly, and rapidly, common wooden articles. How will the work bear upon the mind?

Our perceptive powers are trained by causing any sense in a state of attention to be directed upon any object long enough to pass in review all its parts. Manipulation of wood with a tool certainly does this for the senses of sight and touch. If the act be frequent, as it must be in hand-work, the sense-perception becomes familiar, and is readily recalled by the retentive faculty. Rapid interpretations of such perceptions are a natural result. Clear *per*ceptions evidently aid distinct *con*ceptions, and the memory becomes a storehouse for the kind of facts thus obtained. Again, by a course of judicious instruction in wood-working there would be formed a habit of orderly progress from one step to the next, for no good carpenter proceeds at hap-hazard; and such a habit can be used in other directions. We, as teachers, should like to see it applied in arithmetic, in grammar, and, indeed, in all studies. Just here I may say that Mr. Page instances geography and natural history as having been effectively taught in the Dwight School by means of hand-instruction, and thinks arithmetic, also, can thereby be more thoroughly taught. Imagination must be called into play, for the pupil must construct a mental picture of an object before his hand can give it a material existence. The preparation of a working-plan serves to give definiteness to the image. Then a habit of accurate comparison may be cultivated,—a union of perception with discrimination. This faculty, when generally applied, we call judgment, and we say that its possessor has common sense. The cultivation of taste, especially in regard to form and proportion, is almost inevitable in such a course.

Thus we are informed on high authority, and can in some degree see for ourselves, that hand-culture may be made an effective means of mental discipline, even if we are not convinced that it is indispensable for that end.

In the next place I claim for manual training a positive advantage in the direction of health. While I firmly believe with Alexander Bain, that the school has not for its task the physical preparation of children for after-life, I am equally positive the school-room should not hinder their bodily development. Yet this hindrance cannot but result from the divorcement of bodily exercise and mental activity which the confinement of the school-room involves, unless some corrective be applied. A fair amount of intellectual exertion is a healthy process for a child of the school age, but there are grave reasons for thinking that in our common arrangement of large classes and small rooms, a stunting and shriveling of the body is occasioned. As an offset to this, gymnastics have a place; hence military drill is worthy of encouragement, and every wise teacher will foster athletic games on the playground and in the leisure hours of the scholars. Now comes manual training with a claim, which cannot be gainsaid, that as it trains the eye, the hand, and the brain, so it gives to the muscles firmness, and to the arms and back power, to the joints flexibility, to the legs endurance, and to the whole system vigor. It is work, and work that expands the lungs, vivifies the blood and sends it coursing through the arteries on its health-giving errand. If that old Doctor of Divinity was wise who, when his thinking grew cloudy, would rise, grasp his chair and twirl it about his head till his arm became tired and his head clear, we surely shall be turning in the right direction when we send our pupils from the study-room to the workshop for a few hours each week. There is, moreover, testimony from those who have tried the experiment, that such manual work is so great a relief to the iteration of school work that it is a positive benefit to the course in intellectual studies. There is no reason, therefore, to dread the coming of manual training, as of some school-pursuits, because of its deleterious effect upon the children; we can, instead, have a solid ground for prejudice in its favor.

There is still a third group of advantages attending the introduction of this branch into the public schools. It may be made a positive help in moral training. I fancy this statement seems extravagant, if not ridiculous; yet let us consider whether it is not true.

The domain of moral education is the culture of the principles that control the voluntary action of human beings. It should cultivate virtues and correct vices. Among the former are honesty, diligence, and fidelity to trust; among the latter, laziness and irresolution. In enforcing moral culture it is not enough to state the precept and to give examples; there must be an exercise on the part of the children of the traits commended, and such exercise must be continued until a habit of right action is formed. Then, and not till then, is the child prepared to withstand temptation. Now for the purpose of exercising in diligence an ordinary boy, what better means can be found than to supply him with material and tuition that he may gratify the innate constructive tendency that seems well-nigh universal among children? Honest work would, of course, be insisted upon, and promptness cultivated. Faithfulness in details would daily be illustrated. The rewards could by no accident come to the indolent or inefficient. The irresolute worker would see his comrades pass on to enjoy the products of their effort. Each lesson, too, would come in a concrete form and in kind; his eyes can see, his fingers touch, the reward or lack of reward of his conduct; nor is the judgment delayed. Hence moral lessons would be afforded in just the form by which childhood is most certainly affected. Again, if our children shall be accustomed to systematic labor with the hand, never allowed to become excessive, we may reasonably hope to reduce whatever basis of truth there is in the remark that graduates of the public schools feel themselves above work. Then, too, if a boy has patience to invent a design, set it forth in a drawing, construct the separate parts, fit them into place, and finish the whole as a beautiful product of his brain and hand, he has a power, and a sense of his power, that will be of far wider application than to objects of wood and stone.

Besides aiding in intellectual, physical, and moral culture, manual training will give a young person a kind of possession analogous to the arithmetical, historical, and scientific facts which our schools now supply. It is therefore a process of information as well as of discipline. To know how to drive a nail so as to secure strength and neatness, to see quickly and surely how to make ordinary repairs, the ability to construct any simple piece of apparatus, to use readily the saw, plane, and chisel, and keep the tools sharp, are acquisitions of no trifling concern. Everybody has occasion to do repairs, or have them done. They are universal, and not special. Some educators are coming to believe that in this aspect of the case alone there is reason enough to warrant the introduction of training in the use of a few tools. The object would be to make the graduate not a carpenter, but a "handy" person. In view of the daily life of many of us, such a result of education is eminently desirable.

The four groups of good results to which I have alluded are applicable to both sexes. It is, therefore, no argument against manual instruction that more than half our pupils are girls. The mental, moral, and physical advantages of it are as necessary for the one sex as for the other. There may be a little doubt whether the girls will become so "handy" with tools as the boys, because they in general show less aptitude, and might be expected to work less *con amore*. Then, too, they have less muscular strength than their brothers, and their costumes are poorly adapted for the rougher parts of carpentry. Yet girls need this facility with tools, and both can and do acquire skill in manipulating them. Every woman must do, or ask others to do, many things requiring such manipulation. Every teacher, especially, has occasion for such ability in preparing illustrative apparatus, and the mass of our teachers are, and are likely to be, of the gentler sex. How much better if these shall be able of themselves to repair or construct what they want than be compelled to beg or hire it done! But is it true that they can acquire this ability? Let Dr. D. B. Hagar, of the State Normal School at Salem, Mass.,—exclusively a school for girls,—testify in his own words.

"The experiment," says he, "which was tried in the Salem Normal School last term, in the way of teaching the senior class the use of some tools, such as carpenters handle, proved quite successful. The young ladies learned to use, with considerable skill, hammers, saws, chisels, planes, squares, augers, etc. They became much interested in the work. It served them as a relief from the usual intellectual labor; it gave them excellent physical exercise in a very entertaining way; it gave them practice in manipulating with tools, and thus tended to enable them all the more readily to manufacture apparatus for the illustration of various departments of school study. The time devoted to the mechanical labor was limited to one hour a week outside the regular school-hours. I think the experiment we made is well worth continuing."

The visitors of the school, in their recent report, speak with equal satisfaction of the experiment, and suggest that the State make provision for further instruction in this direction.

At the Bridgewater Normal School, where ladies and gentlemen are under instruction, a similar experiment has been tried, and the principal, Mr. A. G. Boyden, expresses satisfaction with the results.

The foregoing testimony should be borne in mind when we consider, later, the problem of obtaining teachers in manual work.

Now, supposing that it be granted that manual training, if introduced, would be a valuable means of mental, moral, and physical culture; that it would make the pupils "handy" with tools universally used; and that it would be good for girls as well as for boys. Even then we must inquire whether it can practically be introduced into public schools at present or in the near future. Four questions at once suggest themselves, to whtch I will offer a brief answer, viz.: (1) Where can teachers be found? (2) What shall be the course of manual instruction? (3) What will be the expense? (4) How can the time for it be secured?

Of suitable instructors there is now an evident lack, for very few artisans are competent teachers, and few teachers are skilled with tools. Careful search and adequate payment will call out the few who are qualified, and under proper supervision these may train others. Within a year after the date of introduction, normal graduates will be able to do elementary work of this kind. The technical schools, as at Boston and Terre Haute, &c., can furnish directors of such instruction; even the Agricultural College can assist, for its plan of inception included a wider range of industrial pursuits than mere farming. What many of us have seen done for drawing, can be repeated in this line of work until all teachers of the grades to which it belongs shall add manual skill to their other accomplishments.

The course of lessons best adapted to our purpose cannot to-day be laid down. More experiments must be made; more information about foreign attempts of this kind diffused. The best thought of our teaching and supervising force must be applied to the problem. Read what the Swedes have been doing; what Professor Adler is attempting in New York; how Mr. Page succeeded in Boston; what was attempted at Gloucester, and why that industrial school was given up. Other sources of information will present themselves. Possibly if we should begin on almost any plan and pursue it methodically, good results would follow. It seems probable that a simple course in wood-work, occupying two or three hours a week for forty weeks, would be a valuable addition to the present education of every grammar-school graduate. What should precede and follow, I will not venture to assert.

As to the expense there are very grave doubts, but we must remember that experiments are always more costly than the regular work to which they lead. The only figures which I deem useful for our present purpose are the following: At the Dwight School, Boston, from Jan. to May, 1882, thirty-six boys were given two hours of this work each week. The instructor gave in all thirty-five lessons of two hours each, and received for his services $175.00. The total expense, excluding room-rent, was $711.95. Fully two-thirds of this sum was a permanent investment. I estimate that eighty lessons of two hours each, with eighteen pupils in a class, could be given for an expense of $1,000, including in that amount instructor's salary, tools, benches, stock, and janitor's salary, but excluding rent of room. This would give a school of thirty-six one lesson a week, of two hours' duration, for a year. At the end of that time the tools, benches, etc., would still be worth at least $375.00 for future use. It seems to me the experiment is not so costly as to prevent its being tried in many cities and large towns.

But where can the time be found for it? A serious question, as we think of the requirements already made upon the schools. Well, so some of us felt when drawing was proposed; but that subject came, demanded its allotment of time, and holds it. So will it be with manual education when the people demand it. In the Boston, Salem, and Bridgewater experiments it has simply been added to the regular work as a voluntary exercise. In the New York school it is part of a plan radically different from our New England order of procedure. Those teachers who are abandoning recesses will find ample time for it in the two hours a week and more which is thus gained; the rest of us would lose nothing if a judicious course of manual exercise should be substituted for a part of our present recess time. Even if our present sessions were lengthened twice a week for this cause, slight objections could be made on grounds of health.

But the truest method of getting at this matter would be to view it broadly. We should set about a reorganization of our whole school curriculum, and by a carefully-devised plan secure the orderly progress of the child's culture from the kindergarten age through an elementary course suited to his expanding mental and bodily powers, and then through a course of scientific education,—not distinct from, but supplementary to the former,—until as a high-school graduate he should possess, so far as nature has endowed him and opportunity favored, a general preparation for the duties of life. In such a course manual training should enter at a proper time and proceed through an elementary, if not also through a scientific, stage, to the end "that a trained hand may accompany a disciplined intellect."

Of such a remodeling in educational ideas the promise, I confess, is not immediate. But to this result, I believe, the criticism of schools, now so abundant and so annoying, is tending. Some of this criticism is unwise, often even ignorant and unjust,—ostracising an Aristides without suggesting even a Themistocles,—and so is hurtful to the progress of right ideas; yet out of all this agitation will come in due time educational truth. Meanwhile, let us not be dull in thought nor slow to act. As gleams of this truth are revealed to us, let us allow them to shine upon our daily range of labor, and if we can, like the prism, transmit them with added beauty to our fellow-workers.

Manual training as a regular study will not come into general use to-morrow or next year. Let me suggest a simple plan by which, until it shall come, we may encourage voluntary effort of this kind among our scholars. For three years past in Fitchburg, Mass., we have held in our high school, on the last day of the fall term, an exhibition of hand-work. A few weeks in advance the scholars are reminded of its coming. Various committees are appointed, as, for instance, on wood-work, needle-work, cooked food, drawings and paintings, and miscellaneous articles; each committee has one or more members from each class. These are to invite the willing and urge the hesitating to bring, on the day named, specimens of their hand work to the exhibition. No prizes are offered. The sole restriction is that the exhibits shall be the products or collections of the exhibitor's own hands in out-of-school moments. Knowing of the exhibition all through the year, the pupils sometimes undertake tasks that require considerable time and exertion for completion; the Christmas season, too, furnishes an additional motive. When the day arrives each committee is given time to arrange the articles behind locked doors, on tables in the drawing-hall,—a work eliciting much taste and judgment. An hour of school-time is then given for the examination of the display,—the most pleasing examination, it is safe to say, which the school-year affords. The table-space of about three hundred square feet is usually covered with specimens of the work of the year. On the walls are drawings, collections of pressed flowers, and of insects. Collections of coins, stamps, and even of cards are admitted. The articles of needlework are of endless variety, and sometimes have required cords stretched above the tables to show them all. The boys have their desks, tables, boxes, clocks, and other works of the saw and the plane. The food cooked by the girls is so good that the dishes always go home empty. One year a pleasing variety was a dozen young ladies' back combs, made from designs furnished by our scholars. At the first of these exhibitions seventy-seven pupils out of a hundred and thirty made a hundred and three entries, and a single entry often includes numerous objects. I have not at hand figures as to the later occasions. At the end of the hour the school re-assembles, and after enjoying a short musical and literary exercise, assists the teachers in eating a bushel or two of apples. Then the pupils go home to bring the parents in the later afternoon, to witness the display. At dark the articles are removed.

Such occasions have several good results. They connect more closely the home and the school; help to make school pleasant for the intellectually dull, by cultivating charity for them in view of the skill their hands often have; and furnish a stimulus for manual exertion in leisure moments. I think they would be useful in other schools than our own.

ARTICLES CONSULTED IN THE PREPARATION OF THIS PAPER.

I. Addresses of Mass. Teacher's Association for 1882. (1) Industrial Education, by Gen. Francis A. Walker. (2) Slöjd Schools, by Prof. John M. Ordway.

II. Forty-sixth Report of the (Mass.) Board of Education. (1) Pages 11, 27. (2) Page 153: Report of Com. of the Board. (3) Page 161: Hand-work Instruction in Sweden, by Prof. John M. Ordway. (4) Page 215: Industrial Instruction in the Dwight School, by James A. Page.

III. Some Practical Aspects of Industrial Education, by Prof. H. H. Straight; page 22.

IV. A New Experiment in Education, by Prof. Felix Adler; (*Princeton Review*, March, 1883.)

V. Educational Needs; (*North American Review*, March, 1883.)

VI. Manual Education in the Public Schools, by Louis H. Marvel; (EDUCATION, May-June, and July-August, 1883.)

VII. Report for 1882, of Superintendent of Schools, H. F. Harrington of New Bedford.

VIII. Report for 1882, of Supt. of Schools, Dr. A. P. Stone of Springfield.

IX. Annual Report of the Boston School Committee, 1882.

X. Catalogue of the Manual Training School of Washington University, St. Louis, 1882-3.

METHODS OF THE SCHOOLS OF QUINCY, MASS.

BY GEORGE A. WALTON.

The methods of teaching employed for the past few years in the schools of Quincy have attracted general attention, and secured for the schools of that town a wide-spread and an enviable reputation. It thus becomes a matter of public interest, to learn whether this refutation has a substantial basis in character; what are the peculiar points in which the superiority of the methods consist, and what means have been used to secure the good results. As the work of improving the schools of Quincy was perhaps as much the result of experiment as of philosophy, reversing the order of these inquiries, I shall first state some of the means employed for this improvement.

PROCESSES OF ORGANIZATION.

One of the means of improvement consisted in bringing the schools of the whole town under a general organization. Schools in the more densely-populated villages were at first grouped together, and later brought under one roof; three schools located in the sparsely populated portions of the town were abolished, and the children, in some instances, were conveyed, at public expense, to the larger schools. The number of the schools, as also the expenses, was thus reduced. By these changes more perfect grading was secured, and all the grades, from the primary through the grammar, were eventually brought under a superior teacher, who acted as principal, and a corps of assistants, who looked to him for general direction. Nor was this more perfect grading allowed on the one hand to burden and force the slow, nor on the other to retard the progress of the pupils of superior ability; for all the lower grades a system of promotions was adopted, which kept the individual pupils moving forward to higher and higher classes, as fast as it was evident they would be more profited to go onward than to remain. Special promotions based upon fitness took the place to some extent of general promotions based upon necessity. A revision of the course of studies was made which considerably abridged, and in many particulars revolutionized, the work attempted in the lower grades. The formalities of parsing were dismissed; the details of geography wholly disappeared, and portions of the arithmetic. The spelling and the copy-book were banished. Thus great prominence was given to the practical uses of language, reading, writing, and arithmetic. History and geography were placed later in the course. The course in the elementary, including the grammar schools, was thus materially abridged in its range, though it was broadened in some of its applications.

The methods of teaching and study were essentially modified. The method, sometimes called the written, by which the pupil commits to memory and recites the texts of books, was wholly abandoned, and in its place was substituted the object and oral method, by which the teacher presents objects and subjects of thought to the mind of the pupil, so as to occasion in him ideas and thoughts before the written names or words are presented. Books were by no means discarded, — they were multiplied largely in some departments of instruction ; the pupils were taught to make a different use of books. In general, a topical method took the place of the question-and-answer method in recitations. The reading-book was no longer read till, like a much-worn garment, its pieces became threadbare ; for one many were substituted, and one after another read till not the individual pieces, but the vocabulary of words, whatever their relations, came to be perfectly familiar. Geography and history were taught together from diagrams drawn by the pupils, and by the use of the molding-board, upon which outlines and reliefs were represented. Routine, possible even in a topical method, was avoided.

The oral method of spelling gave place to the written ; the embodying of words in sentences was adopted as the general method for learning to spell.

Penmanship was introduced into the work of the first year of school, the pupils copying words and sentences from the board, and writing from dictation ; at the same time they were systematically taught the forms of the letters. The pupils were taught to read by the use of the blackboard. The teaching of the alphabet, for the purpose of learning to read, was kept entirely in the background.

The primary arithmetic was taught after the Grube method, all the elementary processes being illustrated with one pair of numbers, instead of a series of numbers being employed to illustrate a single process.

The change in methods gave rise to increased appliances for teaching, to charts, to globes and maps, to various pictorial illustrations, to blocks, to measures and weights, to numerous interesting devices of the teachers' contributing, and especially to reference-books, and books for supplementary reading. Instead of being limited to a single reading-book of a grade, each of the primary classes was furnished with four or five of the same grade, taken from as many different series of school readers; the reading extended even beyond this, to the *Nursery*, the *Wide Awake*, and other juvenile periodicals. Books of travel and adventure were furnished at public expense to the classes of all the higher grades.

An intelligent and earnest board of school committee-men had for years been struggling with the problems involved in the improvement of the schools; sometimes their struggles had been inspired by hope, often by chagrin, and sometimes by desperation. At last abandoning all hope of meeting in person the demands made upon them, they urged upon the town the necessity of having one competent person to superintend the schools. The recommendation of the committee was adopted, and a person experienced in teaching and adapted to the work of organizing was appointed superintendent. One feature of the situation was that, after a long service, having so signally failed to bring about the desired changes in the schools, the school committee were prepared to surrender the field of operations without reserve; the system of supervision by school committees was admitted to be inadequate to the demands. A superintendent was invited to take full control of the educational affairs of the town, with the assurance that he was to be unmolested, and simply held responsible for results. He had a reasonable assurance, too, that the committee under whom he was to labor had the nature of a commission; its members were likely to be somewhat permanent. It was under the superintendent of schools that most of the work of organization was begun and carried on. Whether the changes were improvements or otherwise, the credit is due to the superintendent under wise committee-men, — he acting as their agent, they pledged to afford him the most abundant and cordial support; adopting or rejecting his plans, and making suggestions of their own for his consideration, they became his counsellors and support in defending and advancing the new lines of operation. To continue the *simile*,—they were the ministry, he the general to conduct the campaign.

This officer pushed forward the work already begun by the committee; he saw only the training of the children, and laid plans wholly in their interest: whatever stood in the way of that was to be removed. He began with a scrutinizing inspection of the course of studies, the modes of teaching, the grading, and so on. The first in importance of the requisites of a good school, he knew to be competent teachers,—these were indispensable; those of this class in the town were retained, others were eliminated from the corps; search from far and near was made for those already experienced, or possessed of the qualities to make good teachers. A remarkable power was possessed by the superintendent for aiding the ambitious, for encouraging the worthy timid, for stimulating and rousing the sluggish, and discovering the inefficient and indifferent. Responsible for results, he early had in hand the force upon which the results so largely depend. To aid in giving unity to the instruction, and to bring into the schools a body of well-trained workers, meetings of the teachers were frequently held; the superintendent went from school to school, giving instruction in the classes; and for the young and inexperienced persons wishing to become teachers, whether in the town or elsewhere, a training class was formed. Young ladies entering this class were instructed by the superintendent in methods of teaching and school-management, taken to the schools to observe the teaching there, and, to a greater or less extent, themselves allowed to assist in the work of instruction. Thus was kept in reserve a force from which could be drawn recruits for a service subject to sudden and frequent depletions.

While this direction was constantly given to the work of teaching; while methods the most radical were advised, the largest liberty in discussing these, and in adopting others if they were more in accord with the views and temper of the teacher, was allowed. This brought to the work of the schools a body of independent and interested co-workers. Liberated from all traditional methods, each out of his own experience invented some means adapted to his peculiar situation. And each, of course, contributed something which was adapted to improve the teaching of all. With such a corps of workers, under such a stimulus, modes of operation the most varied and original were evolved; these the superintendent was quick to improve upon, to apply or suppress, according to their adaptation to advance or retard the ends the schools were intended to promote. Everything was experimental, but each experiment was measured by its conformity to certain

PRINCIPLES OF TEACHING.

In the study of the theory of teaching and in the practice of the art, some fundamental principles were more or less distinctly recognized. So far as the acquisition of knowledge is concerned, only the essentials of a practical education were to be attempted; under the process of differentiation which had everywhere been going on for many years, a large number of branches were being taught and new ones were being introduced into the schools. Some had been pursued to such an extent that their pursuit involved the exercise of powers the pupils did not yet possess; studies the elements of which might easily be taught to young pupils, they were pursuing as sciences. Of course the result was that a mass of meaningless words were being committed to memory; minute and formal examinations, drill, and repetition had taken the place of teaching, and detailed programs had become a necessity.

The principle observed was, that the pupil in early life exercises some of his powers more naturally than others; that his mind most readily responds to impressions made through the powers of observation, and that memory and imagination can be more easily trained at this period than can the reasoning faculties; accordingly the former powers were the first appealed to, and the ones kept especially active and under training in the lower schools.

For the purpose of this training the pupils were led to observe the structure of plants and animals; to note the habits of these, their uses, and so on; and having made the observations, they were allowed to express them orally, and in the form of written composition. Objects in common use were made the subjects for study, and the thoughts suggested an occasion for language-teaching. To train the imagination, pictures were introduced into all the schools; thoughts of these were expressed in oral and written language by the pupils. The narration of real or fictitious events by the teacher or by the pupils was used to call into exercise, and thus train, this important power of imagination.

A study of the method pursued shows that the principle was recognized, that a knowledge of facts must precede a knowledge of causes; that elementary notions must be taught before the science of which they are the occasion can be taught. Hence, language was to be mastered by practice in its use, while grammar was to be deferred till the pupil reached the high school. Numbers were to be learned by exercises in their various operations; that is, by practice in their combinations; while arithmetic as a science was to be studied, if ever, at a later period.

In everything taught, the pupil was to use the sign only when he knew well the thing signified, and always to have clear ideas before attempting to give definitions.

In all the training an appeal was made to the motives found in the natural desires; the desire for exercise and rest was met by providing that all the time of the pupil should be occupied; an exercise in reading was followed by one in drawing, or singing; physical by mental exercise, and always one kind of work alternated with another;

the change in form was assumed to be equivalent to rest. Thus no time was left for idleness, and only the natural fatigue, resulting from the proper school work, was felt by the pupils.

Another of the natural desires which was recognized was the desire for knowlege. Much of the time ordinarily spent in schools of the lower grades in poring over the uninteresting and more or less unintelligible pages of books, was taken up in the study of objects, and was given to acquiring knowledge of things, to observing phenomena, and to learning facts; to writing upon the slates from copy, from dictation, or in expressing the results of the pupil's own study; and, instead of saying over in a senseless way the alphabet as a first step in learning to read, objects brought into their presence were named by the pupils, and while the oral word was upon their lips, its written form was placed upon the blackboard before their eyes. Looking at this word as the sign of the object in their presence, they again pronounced the word, and thus a natural association of the idea and its sign was formed in the mind; in the same way the words forming a complete sentence were presented after the thought expressed by the words had been excited in the pupil's mind. Thus were the words and sentences so associated that their intelligent use was recognized: they were the medium of recalling knowledge already pleasurably associated there. The reading was at first wholly taught by use of words and sentences thus associated. By being able to recognize the words, they became, when found in new relations, the means to the pupils of extending his knowledge through the reading of books. The process of learning to read growing thus out of object and language lessons, was made to contribute to the knowledge as well as to the pleasure of the pupil. Through familiar talks with the teacher, through the careful observation of objects brought into their presence, and through the clear notions acquired of the meaning and use of words, the pupils were constantly forming habits of independent and careful thinking, and with accurate knowledge came facility in expression.

The desire for power was recognized in the training of the children. The ability to observe and do other independent acts gave the pupils the conscious gratification of this desire. The whole direction given to the school-work stimulated the pupils to rely upon themselves; they were helped in all proper ways, but they were chiefly directed, so that they learned how to do for and help themselves. In the lowest grades they learned to invent the language to express their thoughts; with blocks and splints they made simple designs; others they represented upon the board or slate; when possible, diagrams were made to illustrate the various arithmetical problems. The active powers were much exercised in illustrating with blocks the number-combinations, and in constructing arithmetical problems from data of the children's own.

The desire for esteem was recognized in every effort of the pupil, however humble. Every worthy act of the child was properly commended, his wishes consulted, and successes rewarded, if it were only with an approving smile or significant mark upon his slate. The individual was not lost in the class; he was not made the object of comparison with his fellows, but each stood apart emulous to excel, but not simply to exceed his mates.

With these natural desires, the love of imitation was appealed to in all the lessons taught; the copying of letters and words, carefully formed upon the board by the teacher, occupied and interested the pupils in the first and all subsequent weeks. These and others of the natural desires were the basis of appeal in training the pupils.

The methods and principles thus briefly stated constitute what has been termed a new departure The general adoption at once into the schools of Quincy of so many recognized principles and approved methods did, perhaps, make a new departure for that town, as it would for others; it was a revolution; but what was newest and of greatest importance to success was the unreserved surrender of the direction of school affairs into the hands of one person of competent ability to introduce at once such a body of recognized rational methods of instruction. No one of the methods or principles was new in theory or practice. The modes of application varied with the latitude granted the teachers; many of these were novel. But the methods themselves, as claimed by the first superintendent, found their defence in the practices of the best teachers and in the writings upon education in all times. They were adopted because they had been approved by the wisest of men in former ages, and re-affirmed in our own. The new departure was a departure from a mass of unprofitable inventions, some of them of modern schools, and a return to a few well-established, if but little known, principles.

Having thus reviewed the means employed to improve the schools of Quincy, we will notice specifically some of the ends that were to be gained hy the "new departure." No very definite notion existed in the minds of the committee as to the final outcome of the revolution in methods and management they were about to precipitate. Nothing, to their minds, could be much worse than those in common use, and they were prepared to try any which commended themselves to their judgment. It was clear that there were certain facts and processes of instruction which were elementary and of universal practical importance. In their report of 1873 the committee say: "The studies pursued in our common school course should be so pursued that they may result in something of direct use in the ordinary lives of New England men and women."

In another connection one of the committee above quoted said: "It was agreed that a reasonable degree of ability to read, to write legibly, correctly, and grammatically, and to deal readily with simple mathematics, might fairly be expected of about eight years of schooling." And again it was said by the same writer: "A knowledge of the rules of grammar in the lives of ordinary men and women can be regarded only as a useless accomplishment."

These were the sentiments of gentlemen of culture; they were practical men, and they could not fail to see that the effort to push all children on into the higher range of studies tended to degrade in public esteem the rudimentary branches. That these were not as highly esteemed as they ought to be in their own schools was evident. They resolved upon such a change in their course of studies as would make possible in all the schools a thorough mastery of these branches. They determined to give to all what might be fairly recognized to be of intrinsic value to every one, whatever his position in life. The amount of knowledge was to be secured at the earliest age consistent with the proper exercise of the child's mental powers. He was to have a thorough and practical training in language; to learn to speak and write his mother tongue with ease and accuracy; to wield his pen so that he should have a uniform, legible, and rapid hand-writing, and so that he could apply this art in all the ordinary relations of social and business life. He was also to be trained to read at sight the ordinary topics of public interest, whether in book, magazine, or newspaper, and to become sufficiently familiar with arithmetical operations to make all ordinary computations. It was not intended to restrict in the least the mental culture of the child. The best kind of culture the committee saw was incident only to right training, and more likely to result from pursuing in a thorough way and by proper methods a few branches appropriate to the age and degree of maturity of the pupil, than from the "smattering and cram" incident to the methods of which they had witnessed such repeated illustration. It was evident to the committee that in the limited time the average pupil attends school he cannot learn a very great number of facts, but the few he does learn can be acquired by a method which will be a good guide to him in all his future study; hence they sought to apply a good method to the teaching of the few things studied.

The child was to use his own powers actively in gaining knowledge; there was to be no forcing; he was to be no longer kept committing to memory the text of the books; he was to study things, and by his own ingenuity find out what was true of them, and in his own language to give expression to the knowledge thus acquired. The pupil was to be impelled by motives found within himself; he was to work from the gratification felt in the attainments he was making, and from the conscious increase of power gained by his own efforts. The steps he was to take would be easily taken, because intelligible, and because adapted to his strength and previous attainments, and because rewarded by an appreciable good.

The teacher, too, was to be no longer a mere machine: he was to become the loving companion of the child in studying how to present the proper occasions for the activity of the mind of the child. Means were no longer to be pursued as ends. The pupil alone was to be considered the end; the branches he studied were less valuable as useful knowledge than as furnishing a method of study, and the method itself had its chief value in the culture it tended to give the pupil. In the school the pupil was to gain the power to educate himself in the world. His mental activity was to be the cause of his own increase of power. His greater interest was to stimulate him to greater activity. The principle to be observed in securing the culture of the pupil was that the cause of the culture is within; that by a law of the mind the facility for acting is acquired by acting, so that whatever the pupil was to learn to do, that thing he must be practiced in doing; so in mental, so in moral acts.

Right teaching, by presenting the pupil with occasions for searching out and discovering the truth, was to beget in him a habit of seeking first and always for that; and from this habit was to grow a love for the truth, and a desire to fashion the character upon the truth as a model. Both the manners and the morals were to be kept constantly in view in all the intercourse of the teachers and pupils. Great stress was put upon the importance of training the pupil in the practice of good morals and gentle manners.

I now come to the question of first importance, though the last one to be considered. Is there a substantial gain to the schools from the methods under consideration? To bear upon this question I shall bring the testimony of watchful and competent observers. Charles Francis Adams, Jr., for years a member of the school committee of Quincy, and always an intelligent observer, said of the schools of this town after four years' experience with a superintendent:

"In education, as in everything else, there is a strong tendency among those engaged in routine work to mistake the means for the end. I am always struck with this in going into the average public school. It was especially the case in the schools of this town four years ago. Arithmetic, grammar, spelling, geography, and history were taught, as if to be able to answer the questions in the text-book were the great end of education. It was instruction through a perpetual system of conundrums. The child was made to learn some queer definition in words, or some disagreeable puzzle in figures, as if it were in itself an acquisition of value,—something to be kept and hoarded like silver dollars, as being a handy thing to have in the house. The result was that the scholars acquired with immense difficulty something they forget with equal ease; and, when they left our grammar schools, they had what people are pleased to call the rudiments of education, and yet not one in twenty of them could sit down and write an ordinary letter in a legible hand, with ideas clearly expressed, and in words correctly spelled; and the proportion of those who left school with either the ability or desire to further educate themselves was scarcely greater."

In another connection, Mr. Adams, speaking of the condition of the schools before the present methods were in use, said:

"It was found that the A and B grammar scholars throughout the town could parse and construe sentences, and point out the various parts of speech with great facility, repeating with readiness the rules of grammar applicable in each case, yet when called up they were unable to apply the rules and principles so painfully learned, or to form single sentences, or to follow any rule of composition. So, also, as respects reading, rote-reading, so to speak,—that is, the practiced reading of certain familiar pieces in given Readers,—had been brought to a point of considerable perfection. . . . Where the severer test of sight-reading, that is, the reading of an ordinary book which the scholar had never seen before the book was put by the examiner into his hand; when this test was applied, the result was simply bewildering. The greater part of the scholars could merely stammer and bungle along, much as a better-educated person does when reading a book in some language with which he is only imperfectly acquainted. In other words, it appeared as the result of eight years' school-teaching that the children, as a whole, could neither write with facility nor read fluently. The children could glibly tell what a peninsula was, but they did not know one when they lived on it."

Farther on in the essay from which the above extracts are taken, the same writer says:

"When, after three years, a class brought up under the new system was put to the test (in grammar), they could put their ideas into sentences on paper with correctness and facility; and though they could not define what they were, they showed that they could use nouns, pronouns, and adjectives in writing just as well as they could in speech."

"Go to-day," says this writer, "into the schools of Quincy, and in a few moments two or three children, standing about an earth-board and handling a little heap of moistened clay, will shape out for you a continent, with all its mountains, rivers, depressions, and coast-indentations, designating upon it the principal cities, and giving a general idea of its geographical peculiarities.

"In the upper grammar, as well as in the lowest primary, there is an entire change of spirit, and going to school is no longer what it has been. This is recognized quite as much by the parents as by the teachers. Not only is there a marked improvement in attendance, but the attendance is cheerful.

"The method has now been in use four years in the schools of Quincy, and has ceased to be an experiment; its advantages are questioned by none, least of all by the teachers and parents."

If further evidence were needed to show in what esteem the methods and their administrator were held where the results were best known, the great unanimity with which the voters of Quincy annually voted the necessary appropriation for retaining the superintendent could be adduced. From the first, the improvements were so apparent to the people that there was never any organized opposition to continuing the office, and if, for the sake of a reduction in town expenses, anyone suggested cutting off the appropriation for superintendent, the proposition met with prompt and emphatic disapproval. "Anywhere else, but don't retrench," it was said, "at a point so vital to the education of our children." The office secured, and always retained, the confidence of the least as of the most cultured voters of the town. It is now considered as essential to the conduct of the schools as is a similar officer to the management of an industrial, manufacturing, or other interest. Still quoting the author above referred to:

"The improvement of the schools under the new departure, while freely admitted by teachers, parents, and committee, was made even more clearly apparent by the general interest the experiment excited, and by the number of those from all parts who came to see for themselves what was being done. Before 1875 no visitor ever entered the schools of Quincy, except some parent now and then, or an occasional acquaintance of a teacher. In 1878 the number of those coming to observe the new system, especially teachers and specialists in education, was so great that it threatened to interfere seriously with instruction, and the committee found themselves obliged to take measures toward regulating it. The teacher of the lowest primary of the Coddington reported 383 visitors during the five months, February to June, and 113 in April alone."

Of the large number of persons who visited Quincy to observe, all went away impressed with the good character of the work and with the earnest spirit which animated the superintendent, teachers, and pupils. Some found more, others less, to commend; but none denied the merit of the work as a whole. Many who came from curiosity remained thoughtful observers for days, and when they left, went away with a more profound sense than ever before of the possibilities for improvement in our elementary instruction.

Some who came to criticize were disarmed by candid and honest observation, and those who after seeing have not always had the courage of their convictions, have been prompt to apply the hints and suggestions obtained from their observation, and finally, the methods of the Quincy schools are the methods which have been used and are being adopted wherever they are known and understood, and wherever the teachers have the skill and the permission to employ them. While their critics are condemning, they are found to be diligent in applying them; and when well incorporated into their own work, the same persons, unconsciously to themselves perhaps, will be bold to claim the methods as of their own originating.

An examination of the schools of Quincy in connection with the other-schools of Norfolk county, which was made in 1879, after the improvements had been some time inaugurated, showed results superior to those obtained in any of the other towns of that county. In that examination the tabulated results in the grammar grades in Quincy were higher than those of any other town by eight or nine per cent., and in the primary grades by thirteen per cent ; while in the grammar grade they were twenty per cent., and in the primary twenty-five per cent., above the average for the county.

That the tests favored the Quincy work is no doubt true; that was not to the discredit of the examinations, however, but to the credit of the methods employed in Quincy. That parts of that examination were suggested by the superintendent of the Quincy schools has been charged, or at least hinted at. Such was in no sense the case; they originated in the brain of the person appointed to make the examination. When in process of preparation they were submitted to a normal school principal and to a Boston supervisor, in their hands they underwent some trifling modifications. Otherwise their responsibility rests as indicated. Neither the superintendent nor school authorities of Quincy had any hand in making the questions, or any clue to their character. The important question is, Were the tests such as our common elementary and intermediate schools should be prepared to meet? That they were, there is a general unanimity of opinion among those well qualified to judge.

That the schools of Quincy did rank from twelve to twenty five per cent. above the average of the towns of Norfolk County, shows in favor of the methods in Quincy; they may be considered as indicating that the new lines of work adopted in that town were and are producing superior results.

As might be inferred from a statement previously made, Quincy neither had, nor claimed, a monopoly of the methods given such free scope in that town; wherever, and to the extent employed, in whatever school, or town, there the schools rank proportionately high. And all through the county of Norfolk and elsewhere the same methods are to-day elevating and improving the schools. Some of the schools, till recently quite in the background, by the adoption of the same means that have made Quincy famous, are fast taking their place in the front rank. The general interest in the methods, and their ready adoption in so large a number of schools, indicate that the general sense of the public looks upon them as superior to the old-time methods still so largely pursued in some schools. The appreciation of the Quincy work is well shown by the large number of intelligent, well-educated young women who have from its first introduction been members of the teachers' training class in that town. It is shown perhaps still more decidedly by the number of teachers drawn from Quincy to take more lucrative positions elsewhere; and especially by the number of grammar-school principals taken to fill the office of school superintendent, an office which each principal thus taken is filling with success.

That the methods have a substantial basis in principles, and do secure superior results, is shown in the schools themselves, which, with an appropriation just equal to the average for the schools of the State, and in spite of the constant changes in the corps of teachers, have maintained the high rank attained under the first superintendent, and have made considerable advances upon that in some departments, notably in music, drawing, and the elements of natural history. But if there were no outward evidence of substantial gains, such would be inferred from the principles of teaching which underlies the methods. It could not be in vain that an appeal was so largely made to motives found in the natural desires, that respect was shown for the order of development in bringing into exercise the child's mental powers, and that the true order of studies was to such an extent recognized.

The most evident result of the new work was a decided change in the spirit of the schools, in the pupils, and in the teachers. The former immediately manifested an increased interest in their school-work; they were impelled by motives within themselves; they worked from the gratification felt in the attainments they were making, in the conscious increase of mental power. The steps they took were easily taken, because they were adapted to their strength and previous attainments, and because they were met with a present reward. What was assigned the pupils to do they did with zest. The work was less mechanical, less formal; routine and memoriter lessons gave place to intelligent study and investigation. These were material results which might be expected to follow from the exercise of natural desires; they were results that could hardly be looked for from obligations of mere outward imposition.

With increased interest industrious habits were formed; the mind fully employed was equitable in temper. The time of each pupil being fully occupied with his own affairs, he found no time and felt no inclination to mind the affairs of others; hence a spirit of independence and self-respect at once manifested itself throughout the schools. The aim being to make thoughtful children, there was no cramming and no forcing; reading was deliberate, having for its purpose to gain and to express thought; expression was secured by having the pupil at first get the thought, then give it as if speaking to others. Study took on the same thoughtful character. Here, again, the motive was found within.

The order of the schools, which was that of the cultivated family circle, was something more than conformity, — it was obedience. The child no longer the subject of rules arbitrarily enforced, became self-controlled, and so self-respecting.

The teacher experienced as great an elevation as the pupils. He ceased to be a task-master, and became a co-worker with the children; he was at once transformed from a mechanic or machine to an artist, and his work, before drudgery, became a fine art. In every department means of illustration invented by the teachers multiplied; the crayon and the blackboard became animated with the power to speak; reading lessons sprang from the brain of the teacher, and new means of illustration were seen everywhere. Under the new inspiration the most barren mind became fruitful in expedients for enlightening the path of the young learner.

By the former methods of assigning lessons, page by page, and hearing recitations from stereotyped questions, the labor of keeping school was that of the patient, plodding beast, — it was for the day, and to win the daily bread; by its monotonous routine, it was exhausting, because not satisfying; the new methods did not diminish labor, but they made it less irksome. The method enlisted the interest of the teacher by gratifying his higher aspirations.

Some seem to feel that good teaching and better preparation on the teachers' part, that schools made agreeable and pleasant to the pupil, necessarily tend to make the pupil relax his effort. All teaching based on right principles leaves the pupil to do all the work for himself. The teacher's great work consists in so presenting the objects of study that the pupil can intelligently and thoughtfully use his powers in study. One principle observed in Quincy was that the teacher should do nothing for the pupil which the pupil could do for himself. It is not true, as sometimes alleged, that oral teaching leaves the pupil disinclined to study. The effect in Quincy was just the reverse of this,—the mind was stimulated to the greatest activity.

A more intelligent study of books was, as might be inferred, the result of the methods adopted. By the introduction of the new methods a marked change was made in the temper of the teachers. "One thing I have learned by a four-days visit to the schools of Quincy," said a visitor: "that is, never to be cross in school." "No," responded the teacher addressed; "however ill-natured I am in my home, I have learned always to be good-natured in school." The abounding good nature and cheerful, hopeful spirit of the teachers in all the schools was one of the most evident results of the methods of work.

The industrious habits of the teachers and all the pupils infused itself by a natural law into each new-comer; the cheerful and loving spirit, the polite habits which possessed the teacher extended themselves to the least cultured of the pupils. This spirit was busy forming the habits of the pupils after the excellent models found in all the schools.

The one great end and aim of the training in the schools was to prepare the pupils to educate themselves. Hence effort was made to connect the schools and the public library. This was accomplished to a great extent through a member of the committee, who was also a trustee of the library. An address was made by this gentleman commending to the teachers the study of the subject of directing the pupils what to read. Supplementary catalogues were issued, which contained lists of books adapted to the several classes of the schools. These were distributed freely, the result being a great increase in the number of books read by the pupils out of school.

The pupils left the schools with a reasonable stock of knowledge, with a fair amount of culture, a method of study, and, perhaps, best of all, with a love of good books and some ability to select and read them.

CITY SYSTEMS OF MANAGEMENT OF PUBLIC SCHOOLS.

BY J. L. PICKARD, LL.D.

As a means of national defence, more or less importance is attached to popular education. In this country, at least, the policy of providing for the education of the people at public cost is well established. In the minds of American citizens the right of the free school to exist is not questioned. With other nations the system of American free schools is gaining favor. The limits are not well determined, though Congressional action, in the earlier days of our Republic, indicated an upper limit considerably above what some term the elementary branches. The same power which set apart for common schools one-thirty-sixth part of our national domain (afterward increasing the same to one-eighteenth) gave to each State organized upon public territory the right to two entire townships of land for the maintenance of a seminary of higher learning, or university, as it is now termed. It was without doubt the intention to extend education at public cost to the highest possible limit, that the citizen might be prepared for any demand his country could make, so far as that preparation was within the province of the schools.

But it is not my purpose to discuss this fundamental question. The subject of this paper refers rather to the method of administering the trust imposed upon those citizens who are residents of cities. The simplicity of rural life demanding no highly trained talent in carrying out its processes, is rapidly changing into a complex urban life, with varied and urgent demands for a wider and a higher education. Within the last eight decades cities of 10,000 people, or more, have absorbed population to such a degree that one-*thirtieth* has changed to one-*fourth* in marking the relative residents of city and country. With this marked growth of cities has come, also, a wider influence even over the life of the country. Wants are greater. Labor must needs be more productive. Wealth becomes more attractive. With all these conditions actively employed, competition daily presses capacity, and the weaker combatant goes to the wall. The fittest will survive. Since city life already enrolls one-fourth of our entire population, and exerts a controlling influence over the lives of a large majority of the remaining three-fourths, I need offer no apology for accepting an invitation to suggest a system of schools for cities, assured in so doing that the interests of popular education are subserved in an important sense, provided discussion shall be awakened leading to a better administration of our city schools.

All public expenditures should have regard to the accomplishment of the greatest possible cost. *Given*, the end to be accomplished; *required*, the means absolutely necessary for its most effectual accomplishment. *Efficiency* and *economy* must both be kept in constant view, each by itself and each in relation to the other.

I do not mean by efficiency the working out of *any* end in the manner expected from the agency used, but rather the wise selection of an agency with reference to the best possible results attainable under the most favorable circumstances. In specific application it means the highest good of the pupil, his best preparation for the duties that are to be devolved upon him as a citizen.

The best machine is that which does its work most evenly, most speedily, with the least friction, with the least possibility of derangement, and with the least waste of material employed. The most efficient system of schools will be found the one with well-balanced parts of simplest construction, so organized as to make its capabilities commensurate with the end in view, and so administered as to bring out its capabilities to their fullest extent.

Economy needs definition. It is not to be measured by the "balance on hand" at the end of the year, but by the results that appear from the expenditure side of the account. It is not to be shown in small figures entered upon the contract, but in the character and ability and success of the contracting party. One hundred dollars may be so used that no economy appears in the use of a single cent. It may have been better thrown into a well before the service it has secured had begun. It may be so used that results attained would shame the financier that he had not given more for the service rendered. It is not the counting out of wages, but the gathering in of fruits which marks the economical administration. These may be truisms in other departments, but have not been sufficiently recognized in the educational world, and "thereby hangs a tale" of maladministration.

Before proceeding to suggestions in detail, it is proper to observe that a system of public schools has two sides, at least,—the *business* side and the *instructive* side,—distinct, and yet allied in offensive and defensive operations. Each needs watchful care, that neither may trench upon the province of the other, and that both may have constantly in view the good of pupils as wards of the State. Upon the business side we find the Board of Education with its officers and committees. Upon the instructive side superintendents and teachers are found. The one provides appliances; the other uses them. The one puts the teaching-force into the field, and stands by it as support; the other, well supplied and well supported, enters vigorously upon the campaign against ignorance and in defence of intelligence and virtue, pillars of the State which they serve. In our larger cities there is a favorable opportunity for an entire separation of these elements in administration. In the smaller cities there may be a two-fold use of the superintendent,—a necessity to be deprecated; and as soon as possible the superintendent should be relieved of all mere business duties, except as advisory in matters which bring business and instruction into close relationship, such as in rules for the government of teachers and pupils, and in selection and assignment of teachers and pupils to particular parts of the work. But, even here, it is the business side coming over to that of instruction. It is better that the action of each side should be entirely distinct, free from direct interference with the specific work of the other, and yet understood as affording moral support. For example,—superintendent and teachers must take good care of the property placed in their hands, for this is an important part of the instruction. The Board of Education should be recognized as sustaining the teachers in the legitmate exercise of their authority and in the use of means enforcing discipline. To this end there should be an intelligent business element, and at the same time a practical teaching-force. How may these be most surely obtained?

The Board of Education, as at present constituted, is either an elective or an appointive body. Practically there is but little difference in results, for the appointing power is almost universally a political power representing the majority element, which would also appear in an elective board. It requires more grace than falls to the lot of an average mayor or common council to be entirely free from partizan bias. Exceptions sometimes appear. The theory of making every office an elective office is good, but it fails of the best results, especially when political excitement runs high, as is unfortunately too often the case in the cities of our country. There is no office within the gift of the people which should be so thoroughly severed from all political complications and possibilities as that pertaining to the education of the children. The farther the Board of Education can be removed from all contingencies of party politics the better. To this end the time of election or selection should be as far as possible from the heat of a political contest. The nominees, in case of election, should not be the product of caucuses, but presented by a committee representing the prominent political parties of the time in equal numbers from each party; the nominating committee being selected by the central committees of the parties, each central committee naming an equal portion of the nominating committee. All parties will thus be in honor bound to support the nominees, each receiving the full vote of the entire constituency. There will then be entire freedom from any expressed or implied pledges, and no claim can be laid on account of special service rendered in the election. Each man thus elected will be conscious of having received the votes of political foes as well as friends. If this prove impracticable, I can not see any other feasible method of a popular election. The judiciary are as likely to be the safe depository of power to appoint as any other body of men. Thus much as to method of bringing the men into the office. How many shall be assigned to the business management of the school system? A small body in numbers is the most effective. There can be no shifting of responsibility. The entire Board will be a working committee, organized in sections for specific work, but engaged as a whole upon all general business affairs, such as the care of school property, the erection of school-buildings, the determination of salaries. One section of the committee would be specially delegated to confer with the superintendent as to qualifications of teachers, and their assignment; and another section to the control of educational funds. There is no city in the United States where the *work* is not done by less than ten men. From five to nine members of the Board of Education, selected with special reference to their general intelligence and business tact, will be found ample. The idea of representing nationalities, or localities, or peculiarities of sentiment, political or religious, is an erroneous idea, and is amenable to charges of partiality and of inefficiency. The selection of persons upon the grounds named is sure to bring into the Board of Education extremists; and want of harmony with its attendant neglect of higher interests, or such excessive harmony as is found in log-rolling practices, will surely be fatal to both economy and efficiency.

The next point to be considered is that of length of service. If experience has any value, continued service is most profitable. The cry for rotation in office should never be heard in its application to school authorities. The harm resulting from frequent changes will be widely felt. Incompetency of teachers often escapes the observation of the man just leaving an office, and fails to arrest the attention of his successor until too late for his action; and the same observation will apply to other features of the work.

One step more: the office of member of the Board of Education should be a salaried office. The important service rendered is worthy of compensation. If any person elected sees fit to decline the salary, it is an act of benevolence. But some one will say, "Does not the offer of a salary prove a temptation to some impecunious incompetent?" The temptation is not half as great as that which lies concealed in some prospective perquisite, and an eye to the main chance is more intent upon the latent than upon the patent pecuniary reward. Again, those who select will feel more free to call their best friends into an office which furnishes some return for their valuable service, while "an empty honor" will be considered a sufficient reward for a hungry hanger-on.

To sum up this part of my subject: A small Board of Education, with long tenure of office, selected by some means as far as possible removed from all partizan influences, and paid well for services rendered, will prove both efficient and economical. The work of such a Board will be best subserved by giving them virtual control of the finances, even to the point of levying school-taxes. A maximum limit may be fixed by the legislative authority, but there should be perfect freedom as to amount to be collected within that limit. The best laborer must be sure of his tools. Money is the most efficient tool in the hands of a conscientious, working Board of Education, and they must be sure of its constant readiness for service.

As the public health is of equal importance with the public virtue, it is quite important that a good degree of medical knowledge should appear in those who administer the schools. A good, sensible physician should be found in every Board of Education,—not as one in many, but as a potent factor in all matters pertaining to sanitation. He should be associated with the superintendent most intimately in the determination of the course of study, and its general development in the school-room. Teachers and pupils need his watchful eye.

The business management now seems to me fully organized. Let us turn to the instruction-side for a few moments, — superintendents and teachers. The superintendent is properly the choice of the Board of Education, and should hold his office during good behavior, subject at all times to removal for cause, but never to the humiliation of an annual inspection and election. He represents in the work of instruction the prevalent sentiment of the business management, so far as their business has to do with teachers and pupils. For the time he stands in the place of the Board, acting promptly, and conscious that whatever he does must pass under review and be approved by the authorities whom he represents. He stands pledged to pupils and to the public for the best possible use of all school appliances. But he cannot do the work alone. He stands general for the great army, with its divisions, its corps, its brigades, its regiments, its companies. His orders are supreme; his assignments should be unquestioned. Once organized, his forces may be subject to the most strict rules of the service as to assignments and promotions. It is plain that, while in constant correspondence with the school authorities, he should have a controlling voice in the selection of his teachers. How can a mechanic be held to account for the work he does, if he be compelled to use such tools as inexperience may furnish him? If the superintendent be a man of good common sense, of a thorough acquaintance with the work he undertakes, and of high integrity, — and no other should ever be brought into such a work, — he is fit to act untrammeled. He should be able to say to talent: " Cast in your lot with us. Your tenure of office shall be as permanent as your worth shall determine. You will be subjected to no annual examination, but you will be under daily supervision,—thorough, helpful, impartial. Of the reward for your services you need have no anxiety. Should places open that have a strong attraction for you, be sure that you are in the line of attainment and promotion; no stranger shall be preferred. This promise give to talent, native or acquired. If listlessness or conceit be allowed possession, and opportunities for improvement pass without your earnest determination to be better for their existence, then you wlll recognize the justice that lies back of the request for your resignation.

What courage would be inspired in a band of teachers thus led and thus addressed? This being interpreted is, Let all engaged in the work of instruction feel that their position is as permanent as is their merit.

In many of our cities the farce of an annual election of teachers is carried out. The plea is: " At the end of each year your engagement is at an end. You have no reason to complain if you are not reëmployed; and then it gives us such a fine opportunity to get rid of you without a word of reason. We have all along known of your incompetency, but have felt that by limitation of contract we should soon be rid of you, and our consciences have thus been put to rest. The rights of little children weigh nought against the ease with which we discharge a solemn duty." The easy way proves the most insufficient in the end. Incompetence somehow has a winning way with those who take this easy way of doing their duty. But a question of greater importance lies at the door of entrance. If this question be properly answered, the door of exit may be bolted. Two classes of applicants will seek admission, — those who have had practical acquaintance with the system from the pupil's side, and entire strangers. The means of judging of their fitness will be the same in a degree and yet the probability of judging correctly is greater with the former than with the latter class. Right here I would suggest a way of transforming this probability into a certainty. Every city system should have as one feature a normal school, with a school of practice and of observation attached, so that special professional training may be secured, and the opportunity be given candidates for the teacher's office to try the practical work under the eye of an experienced training teacher. This school of practice, in all respects similar to the other schools of the system, will prove itself as possessing a wonderful power of revelation,—held as a mirror before the tyro, and serving as a microscope to the observing eye of the superintendent. The intellectual acquirements of the native candidates will be quite thoroughly understood after years of careful inspection in this daily routine. The normal school will enable them to study the science of teaching, and the school of practice will give them control of the art. Successful examination as to literary acquirements before a board of professional teachers, and a good record from the normal school and school of practice, will serve as a ticket of admission through the entrance-door.

With strangers, successful examination and reliable recommendations will admit. Now both classes are in the vestibule. Yet another door must be passed. Success in temporary employment as occasion offers, in the absences of teachers upon the regular list, will show the way to the seats reserved for the competent. Candidates will wait in the vestibule until the opportunity for trial comes, and then will return and await their call to permanent service. The literary examination admits to the vestibule. The examination in practical work will determine the order of appointment.

The most difficult part of my task yet remains. It pertains to an outline of the work to be done,—the course of study. Its limitations I will not consider, except to say that, with the large number of well-endowed colleges and universities now in existence, it appears to me impolitic to embrace collegiate studies in the curriculum. The right to do so is unquestioned, if the people see fit to tax themselves or to act as trustees for a fund donated for the purpose by some benevolent citizen. But the expediency of such a measure may be doubted. The ground left for occupancy is that of the studies pertaining to the foundation upon which specialists and professional men may stand. In every department of industrial life men are wanted. Out of these specialists will rise. The course of study should have reference to the development of manhood. The processes of civilization are carried forward most perfectly through intercourse. Language is the channel of intercourse. For a narrow field, widening it is true, but still restricted somewhat, the English language will suffice. But the broader field is opened by the extension of means of intercommunication. Railways, steamships, and telegraphs are making the world a family of kindred. We need to understand each other without the intervention of interpreters. The languages of Europe are made media of communication between the nations speaking these languages and others. The citizen of these United States is not thoroughly furnished unless he have at hand the means of communication with those into whose interests he is brought through commerce,—commerce of ideas as well as commerce of material wealth. But language-study has not alone this utilitarian application. The processes of acquisition and of comparison and of careful analysis are helpful to the strengthening of intellectual fibre, which weighs much on the side of influence. What now may be thought of this view, no one questions the immense value of an understanding and a facile use of the English language. More ability to read fluently does not insure an understanding of what is read. Least of all does it give the pupil the power of expression, — a power infinitely superior to mere enunciation. Language is both a means and a measure of culture. The observations of the scientist are of little value if unexpressed. If expressed clumsily, they are not properly understood. Homer uses the same word for *speech* and for *man*, — a derivation from the word to *shine*. By speech man shines. All allied studies which deal with man as a thinking and speaking being; knowledge-studies which give man something to speak about; history which reveals to him sources of influence and sources of failure as well, are essential. Man's limitations as to time and space enforce acquaintance with mathematics. Language, science, physical and metaphysical, history, and mathematics cover the field. Some acquaintance with each should be the possession of every child and the fullest acquaintance with each should be possible to every one.

There is but one universal language. It is addressed to the eye, and is easily comprehended, whatever the form of speech employed by those to whom it is addressed. The graphic method of illustration is of universal application. No one branch of study is more important than that of drawing. It is of highest importance in all practical studies, so called, — those which pertain to the manual industries.

My plan of a course of study is not complete without provision for a Manual Training School, apart from the usual routine, in a building specially adapted to the purposes. It has been frequently urged by those who have taken up a popular fancy, and have not had the insight necessary to a comprehension of it,—that our courses of study are defective in the direction of education for the laboring masses. Hence, say the hasty advocates, let us have manual labor introduced into every public school, so that the child may be trained to the life he is to lead. The theory is good; but will its advocates tell us something about its practical possibilities? Of the more than three hundred distinct manual industries, all cannot be introduced into each school. Which shall be pursued, and which neglected? Of the manual training schools deservedly popular and of infinite value, work in wood and iron is prominent, almost exclusive,—modeling in clay being associated in some. In what room of the school-building shall the forge, the lathe, the carpenter's bench be placed? The instruction of eighty per cent. of public school children is in the hands of ladies. Shall they pass apprenticeship in trades to which they have no calling, that they may teach indifferently a class of girls who will never enter these trades? Sewing may be taught, but must boys engage in the same? There is a more excellent way. Let fundamental studies be thoroughly taught, such as underlie all industries. Drawing is of great value to all. Let it not be neglected. Ability to read and to write well is an ever-pressing need. Control of a good English vocabulary is essential. A knowledge of what is within us and what is about us in nature's wondrous storehouse cannot be set aside. The wide world is drawn upon by every mechanic. He must know the sources most prolific and most profitable to his special calling and needs. There is enough to be learned to occupy the years of an ordinary curriculum. But let me not be misunderstood as underrating the value of manual training. A system of schools is not complete without its Manual Training School.

In summing up these briefly-sketched conclusions, let me say that I would have in my ideal system of schools for cities the best elements found in all at present existing, but by no means all found in any one system.

1. A small Board of Education carefully chosen from the most intelligent citizens for a long period of service, subject to no party in State politics or in religion, able to select a good leader in the work of instruction, themselves confined largely to the business side, and leaving to the superintendent of their choice the fullest freedom within the pecuniary limits their business sagacity determines as proper.

2. Superintendent and teachers carefully chosen after sufficient trial, and left to perfect freedom as to methods of instruction in the work assigned, responsible only for results. and paid according to merit as determined by trial; secure in office so long as merit warrants; encouraged to the best effort by the certainty of promotions within the ranks; without the necessity of securing the means of support or of the needed aids to their work in employment out of school-hours; and with salary attached to place and not to the sex of the occupant.

3. A course of study covering the work now preparatory to our best colleges, including a Normal and Training School for the education and discipline of teachers; a Manual Training School for the special education of the future mechanics of the city, with special attention to such fundamental studies as are of highest value in every walk of life, and with opportunities for higher education for those who may aspire to professional life; and all within the confines of what may properly be called public schools, dropping entirely the unfortunate distinctions made between primary, grammar, and high schools.

4. Such a popular support as shall leave the call for funds entirely to the discretion of the Board of Education, with such limits as State legislation may see fit to adopt; an ideal system perhaps, but within the range of possibilities I firmly believe.

ANDREW J. RICKOFF, A.M.

Andrew J. Rickoff, A.M., Superintendent of Public Instruction, Cleveland, Ohio, was born August 23, 1824, near Newhope, New Jersey, a small village lying between Trenton and New Brunswick. His parents removed to Cincinnati when he was about six years of age. Here he attended successively the public schools, Woodward High School, and Woodward College. Having completed the studies of the high school he commenced the collegiate course, but on the death of his father, withdrew to enter upon the career of a teacher, which he has followed from that time to this. He was then less than seventeen years of age. With so limited a preparation for his duties, he had to complete his education by many years of assiduous study after he had begun his labors in the school-room as a teacher. But having a strong constitution, he was able to do an amount of work which few have been equal to. For many years during this period of his life he was accustomed to allow himself but six hours per day for sleep. While thus carrying on his private studies, he never permitted himself to go before his classes without so thorough a review of the subject before them that he was able to couduct their recitations without reference to the text-books. Thus he acquired the reputation of an indefatigable laborer in whatsoever was set before him to do. By means of such application to study he won from the Ohio State University, at Athens, the degree of A.M. This, in brief, was the career of Mr. Rickoff as a student.

As a teacher, his history may be presented in chronological order, as follows: He commenced teaching in 1840, and after being engaged for a few years in the country schools in the vicinity of Cincinnati, he was invited to take charge of the schools of Portsmouth, Scioto county, Ohio, as superintendent. There he remained five years, at the end of which time, August, 1849, he received an appointment in one of the public schools of Cincinnati, —the same that he had attended for a while when a young boy. Here he served as assistant one year, at the end of which he received an appointment to his old position at Portsmouth, at double his former salary. This he at first accepted, but afterward declined to take the principalship of the school in which he was then engaged. This post he held a little more than two years, when he was appointed Superintendent of Schools of Cincinnati, by the Board of Trustees and Visitors, being the first one to receive such an appointment from the Board, the two superintendents who had preceded him having been elected by popular vote. Having filled this office five years, he established a private school for the sake of the better pay which it afforded. For the succeeding nine years (1858–1867) his attention was mainly confined to this work. But during that time he remained upon the Board of Examiners of teachers for the city, and in 1864 was elected from the first ward to the Board of Education, and in the following year to the presidency of that body on the retirement of the Hon. Rufus Ring, who had then occupied the chair for fourteen years. Owing to removal beyond the city limits, he remained in the Board only two years. In July, 1867, without his knowledge or consent, and during his absence from the city, the Board again elected him to the superintendency. But, on returning to the city, he declined the flattering offer, and advertised the re-opening of his own school for the following September. In less than six weeks, however, he was offered the superintendency of the schools of Cleveland at a salary of $4,000, more than twice what was then paid by any city having a population less than double that of Cleveland. This he accepted and held for nearly fifteen years.

In the winter of 1849–50 Mr. Rickoff became a member of the Ohio State Teachers' Association, and was elected its president in 1855, presiding at the sessions held in Cleveland the following summer, and at Columbus in the winter of 1856–7. He became a member of the National Teachers' Association in 1859, and was elected to preside at the session held at Washington, D. C., in 1860. For several years he was president of the Ohio State Board of Examiners of teachers, which had been established by legislative enactment, for the purpose of examining and issuing life-certificates to those who, by their scholarly attainments and success as practical teachers and superintendents, had won the right to such honorable distinction. As a member and as chairman of successive executive committees, Mr. Rickoff has had great influence in directing the proceedings and moulding the character of the educational associations with which he has been connected.

For many years he was a member and regular attendant upon the meetings of the "Round Table Convention," as it was called, which was never composed of more than five or six members. J. L. Pickard, then Superintendent of Schools in Chicago; W. T. Harris, Superintendent of Schools for St. Louis; and John Hancock, Superintendent of the Cincinnati schools, were constant attendants at every meeting. It was the custom of these gentlemen to meet annually in one of the cities named, or at intermediate points, for the purpose of discussing the educational problems of the day more fully and freely than was possible in the larger assemblies of their profession. The Society (so-called,—it was without constitution or by-laws) derived its name from the fact that its meetings were held around a table in the private parlors of the hotels at which the members were staying for the time. All reporters were excluded from these meetings. To the thorough and exhaustive discussions of this association, ranging as they did over almost every point of school organization, instruction, and discipline, the progress, uniformity, and high standing of the Western schools, may in great measure be justly attributed.

Mr. Rickoff is never satisfied with what has been attained in educational affairs. During this active service of more than forty years as a teacher and school-manager, he has been an indefatigable student in all matters pertaining to his profession. Probably there are not more than two other libraries in the United States which are as complete as his in works pertaining to education; one is the library of the National Bureau of Education at Washington, and the other that of the Hon. Henry Barnard at Hartford, Connecticut. As he puts it himself, he "is a skeptic in education," believing that the practical results of our present systems of public and private schools are far from what they should be; but, being sanguine of the future, he has been recognized for many years as one of the foremost among educational reformers. On this point we make the following extract from the *History of Education in the State of Ohio*, published by authority of the General Assembly, 1876:

> "No man in Ohio has studied more thoroughly the classification of schools and done more during the last twenty years to bring about the degree of perfection which has been attained in the present system of grading than Mr. A. J. Rickoff, now superintendent of the Cleveland schools. Mr. Rickoff's attention was called to this important subject when, in 1854, he was superintendent of the public schools of Cincinnati. Soon after he entered upon the duties of his office he made a report on the expediency of organizing grammar schools, intermediate between the district and high schools, as a part of the school system. . . . In this able report he defines classification to be 'the arrangement of pupils according to proficiency and capacity for study into grades, classes, or divisions. Other things being equal,' he said, 'that system of schools is most nearly perfect which enables us to secure the nicest classification. It is at once the most economical and the most efficient,—the most economical because it gives the greatest possible number of pupils to the teacher, and the most efficient because it gives to each pupil the greatest possible share of the teacher's time and labor.' In accordance with this plan, which differed in many points from any plan previously adopted, and, on his recommendation, the grade known as the 'Intermediate' in the Cincinnati schools was established. So perfect was the grading and classification of these schools at this time that few essential changes have since been found necessary."

Mr. Rickoff also recommended the plan of organization which is now in successful operation in the city of Cleveland. Though it differs from the system which had, on his recommendation, been adopted in Cincinnati, it was thought to be better adapted to the peculiar circumstances of the Forest City. Speaking of the school organizations of the United States, Sir Chas. Reed, chairman of the School Board of the city of London, England, who was at the head of the educational commission which came to this country in 1876, reported to the Committee in Council, that no single city was "superior to Cleveland, closely followed in alphabetical order by Boston, Chicago, Cincinnati, St. Louis," etc.

Mr. Rickoff has given much study to school architecture, the warming and ventilation of school-houses, etc. Accordingly he was authorized by his Board of Education to make the floor-plans of six of the largest school-houses which have been erected under its jurisdiction within the last six or seven years, the Central High School building being among the number. The latter is believed to be one of the best arranged, as well as one of the most magnificent buildings yet erected in the United States for public school purposes. All the plans mentioned included also plans for warming and ventilating. Of these plans the French commission reported to the Minister of Public Instruction that they greatly preferred them to the school-house plans of Boston, New York, etc., and reiterated their judgment thus: "We do not hesitate to put Cleveland in the lead in respect to school-houses."

In the year 1877 the great publishing firm of D. Appleton & Co. solicited Mr. Rickoff and Dr. Harris to prepare a series of school readers. This being done, they were printed and put on the market, and within the four years which have elapsed since their publication they have reached a sale of many millions of copies. In this undertaking Mr. Rickoff was greatly aided by his wife, Mrs. Rebecca D. Rickoff. Although Mrs. Rickoff was never engaged as a teacher under his superintendence, her devotion to the cause of education and her pride in her husband's work caused her to be actively interested in all that pertained to it. To her he acknowledges his obligation for much of his success in the direction of the primary-school work which has come under his control. He says that to her he owes the development of that which is finest and best in his system of primary instruction.

[The foregoing sketch of the educational career of Mr. Rickoff was printed early in the spring of 1882, by the Western Biographical Company, for the first volume of the *Historical Cyclopædia of the State of Ohio*, which has just been published. Soon thereafter he was defeated in his candidacy for reëlection in Cleveland. He had been away from the city for several months previous to the election on leave of absence, which had been sought on account of the dissensions in the Board of Education. In council with friends of the schools, who were also his warm personal friends, he had frequently proposed to send in his resignation of the superintendency, but they had insisted that it was his duty to leave the responsibility of his removal with the Board of Education. He followed their advice with the result just stated. Two months before the expiration of his term of office in Cleveland, which was to occur September 1, 1882, he was elected, at a larger salary than he had previously received, to the superintendency of the schools of the city of Yonkers, on the Hudson, near the city of New York.

Mr. Rickoff is at present engaged in the preparation of some educational works, one of which will soon be issued by the Messrs. Appletons.]

FOREIGN NOTES.

Great Britain.—*The Merit Clause of the Education Code.*—Undoubtedly the feature of the "New Code" which has excited most attention is the "special merit clause." Mr. Mundella is of the opinion that "It will do more to lift the tide of education than any other clause in the scheme." "The full value of a school's work," he asserts, "is not accurately measured by the results of individual examination as tabulated in a schedule,"—a truth, of which the merit-clause is the first distinct recognition in English educational codes. For a better understanding of the clause it will be well to compare the basis of grants in the old and new codes.

In the former the grant is made up as follows: Four shillings a head is allowed on the average school attendance, and a further sum of nine shillings a head on each child who has completed its stipulated 250 attendances, and passes the Inspectors' examination in reading, writing, and arithmetic. To these sums must be added a further allowance of four shillings a head on each class which passes satisfactorily in any two of certain specified "class subjects," and one shilling a head for singing. Also, if due provision has been made for teaching "specific subjects," as Latin, French, German, and various branches of mathematical and physical science, a grant of four shillings per subject is made for every day-scholar not below the fourth standard, who passes a satisfactory examination in not more than two of such subjects. A further grant of one shilling per scholar, calculated by the average yearly attendance, is also made contingently on a report from the Inspector that the discipline and organization of the school are satisfactory.

In the new revised code, the average attendance of the year will form the basis of the whole grant. The items have been settled as follows: The fixed grant on attendance is raised from four shillings to four shillings and sixpence. The grant for reading, writing, and arithmetic is eight and fourpence a head, if the whole number of children on the school books pass satisfactorily in all three. For each child failing to pass, a deduction of one penny is made. In the grant for "class-subjects," the sum payable will be one or two shillings per subject, according as the knowledge shown is fair or good. The grant for singing, if it be taught only by ear, is sixpence a head; if taught by note, a shilling is awarded. As regards the specific subjects, the payment will be individual, and will not depend upon the average yearly attendance. Finally there is the "merit clause," which for general merit, such as organization, discipline, intelligent teaching, and quality of school work, provides a grant, calculated upon the average attendance of the year, and varying from one to three shillings a head, according as the inspector's report is fair, good, or excellent. The clause has excited much opposition, especially from teachers and school managers, for the obvious reason that the award rests wholly in the discretion of the inspector.

In the last annual conference of school-board clerks, held at Leicester, Mr. Goddard, president of the association, discussed the merit clause as follows:

> "The clause recognizes the fact that intellectual effort, as distinct from mere results, promotes intellectual power, and that a system of instruction is valuable only in so far as it encourages accurate observation, clear thought, and precise expression. The work of judging upon these points is not an easy one. It presupposes considerable experience, nice discrimination, and an extensive acquaintance with educational theories and practices. It may be anticipated, therefore, that some dissatisfaction will arise with the action of inspectors in awarding this portion of the education grant. The ideal to be aimed at to attain the mark 'excellent' is a high one. Few teachers are equal to it; not many will reach it; but all must, if they are not to fall very far short of it, submit their plans and their teaching to searching and honest criticism, rejecting mechanical and illogical processes even although they may lead to accurate results. I look upon this clause, firmly but fairly administered, as one whose tendency will be to give an immense impetus to the science as well as to the art of education. I trust that it will lead to the discovery of some practical modification of kindergarten exercises, rendering them applicable to English infant schools; to that rational treatment of arithmetic which will do for the children of the elementary school 'what mathematics is expected to do for the advanced student of the university.'"

Development of Elementary Education.—A very interesting return has been prepared by the Education Department in answer to an address of the House of Commons brought forward by Mr. Fowler. It supplies information for the last twenty years regarding schools under inspection in England and Wales. By means of the figures we can see at a glance how the elementary school system has been developing since 1862. In that year there was accommodation for 1,264,146; in 1872 it had risen to 2,295,894; while in 1882 it had increased to 4,538,329. In 1862 the numbers in average attendance were 799,158; in 1872, 1,336,158; and in 1882, 3,015,161. More striking still are the figures which represent the numbers who were examined in standards. In 1862 there were 180,000,095; in 1872, 661,580; and in 1882, 2,110,374.

The examination of children in the upper standards has been gradually extending since 1872, the first year in which a record was kept. In that year 17 per cent. were examined in Standards IV., VI.; but in 1882 the percentage had increased to 28. The average cost of instruction was only 19*s.* 10½*d.* in 1862. In 1872 it had risen to £1 7*s.* 5*d.*, while in 1882 it was £1 16*s.* 8½*d*,, a decline of twopence for each pupil compared with 1881. The income from subscriptions in 1862 amounted to £254,164, and in 1882 to £724,846. This shows a great amount of liberality in the cause of education, but there has been a steady decline since 1877, when the total was £786,245. The rates, on the other hand, have been rising rapidly, and the total from this source of income in 1882 was £808,121. The school fees also have been at the increasing rate of £100,000 yearly, the total in 1882 being £1,585,928. The government grants for the last year were £2,393,364.

GERMANY.—In the Bavarian higher lands, at Berchtes-garden, there is a drawing and wood-carving school, which was established in 1840. It gained recognition from the authorities in 1858, securing funds for building purposes and the pay of teachers. Since 1880, the school has assumed an important relation to industry in the neighborhood.

The Lambrecht weaving school, Rhine Palatinate, was organized in 1876. Day and evening sessions are held, drawing being a prominent feature in both. Tuition in evening classes is 1 mark (23.8 cents) a month. Annual fee in day classes 150 marks. Since the organization of the school, 136 pupils have been instructed.

The report of the Berlin gymnasium and real schools, for the winter semester of 1882–83, shows, in 16 gymnasia (including the city progymnasium), 427 teachers and 10,276 pupils; of the latter 2,257 were in the preparatory schools. In 8 real gymnasia were 5,681 pupils, of whom 1,350 were preparatory and 226 teachers. Five higher schools for girls reported 4,077 pupils, and 146 teachers, of whom 59 were women.

HOLLAND AND BELGIUM.—Great interest has been awakened in the subject of gymnastics in Belgium by the publication of the manual of Swedish gymnastics for the use of schools, the marine, and the army. The comparative excellence of this and the German system is discussed. Attention is called to the small amount of apparatus required by the Swedish, or Ling, system. The results of the training were demonstrated at the fête of 1880 by a group of Swedish gymnasts, whose fine carriage and exact and supple movements were greatly admired.

The industrial school for girls at the Hague numbered 86 pupils on the 31st of December, 1882.

Liege, with a population of 100,000, enrols 6,000 young men in evening, the art, and science schools.

AUSTRIA.—There are 166 gymnasia in Austria, against 165 last year; of these 114 are higher gymnasia, 20 lower gymnasia, 9 real gymnasia, and 23 combined government institutions for secondary instruction. There is an effort to diminish the number of lower and real gymnasia, and replace them by the higher. The total number of real schools in Austria is 87.

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A. P. Stone.

EDUCATION.

[illegible] NOVEMBER, 1885.

THE [illegible] OF EDUCATION.

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EDUCATION.

No. II.—November, 1883.

THE FORCE OF EDUCATION.

BY ALLEN ANDREWS.

The force of education is centrifugal. It inclines to no common centre; it cannot be repressed or imprisoned. Neither can it be directed and restrained in any prescribed channel. Education is growth, and develops a force that presses outward, ever enlarging its sphere, until it pervades all the region of thought and carries its inquisitions into every field of enterprise and speculation. It does not unify, but diversifies our ideas, sentiments, and convictions. To teach men to think alike is compression. To teach men to think apart is expansion. The force of education is not conservative,—it is radical. It is a disorganizer; it is not content with repose, but antagonizes the established order of things, and, in its progress, is resistless, unsparing, and often cruel and merciless. It attacks, without fear or favor, man's dearest creeds, man's profoundest theories, and submits everthing to the crucial test of naked truth and cold logic. And many a fond fancy, cherished fable, hallowed tradition, time-honored conceit, and much false philosophy, have been stricken from the pages of literature, history, and science by the irreverent arm and iconoclastic hand of free, independent, progressive thought.

Through educational force the transition of nations is from savagery to enlightenment; of government, from the autocratic to the democratic; of religion, from the ceremonial to the conscientious; of jurisprudence, from the technical to the equitable; of science, from the dogmatical to the evolutionary; of pedagogics, from the artificial to the natural; of mechanism, from the simple to the complex, of arts, from the ideal to the utilitarian. The diffusive energy of education, culture, and intellectual growth, like many of the most momentous forces of nature, is seen in its operation only by its results, and can be measured only by comparison.

Nowhere are the effects of education more conspicuous than upon the civilization, government, and religion of mankind. In a sense education destroys both church and state. At least it has taught the people that the government is for them, and not they for the government; and it has disintegrated the church and multiplied creeds and divided worshippers into many sects. The best examples this world has ever given of the mere power and permanency of government are where the people are divided into two sharply-defined classes,—the magistrates and the subjects. The former think, design, and command; the latter obey without thought and without design. The magistrates, and often the monarch alone, legislate, interpret, and execute the laws; the subjects do homage, pay their allegiance without question. and are not intrusted with the problems of government.

For many centuries, while the world lay in ignorance, before printing was an art, when literature was unknown, and books unmade, and manuscripts were few, when the knowledge gathered in a lifetime was dispelled at its close, human energy sometimes slept or lay purposeless; again it was fitful and furious, and beat upon itself, like the mad waters of the storm-tossed ocean, in fruitless combat, until exhausted it fell into another calm of inactivity. This condition of society gave rise to tribal warfare, or internecine struggle, to determine whether this or that one should reign a king; and often, either by his superior talent, physical prowess, artifice, or by accident, some central character was evolved, around whom the commoner people clustered. They acknowledged him a leader, gave him their fealty, paid him homage, placed him upon a throne, and became his servants, and obeyed his mandates. If he really possessed greatness, his military exploits and national acts alone were chronicled, — and those briefly; and when he died he left nothing else on record,—no storehouse of learning to constitute a capital for posterity in the pursuit of knowledge. After his death his subjects, in their very need of a guide and ruler, transferred to the eldest son and heir, as the best way to avoid a civil war, the allegiance, obedience, and devotion the ancestor had won from them. From this comes hereditary monarchy, primogeniture, feudal tenures, and the "divine rights of kings." This is the condition under which kingcraft flourishes best.

Likewise the most striking examples the world has ever given of the mere potency and perpetuity of the church, as an organization, is where the clergy alone, or their ecclesiastical head, think out, formulate, and promulgate the tenets of their faith, and the laity never think for themselves, and are not entrusted with propositions of theology, and are almost wholly untaught, except in the school of blind credulity and automatic obedience.

What wonder that these two powers, the church and the state, as thus organized, tacitly entered into partnership, and combined to subjugate the world, grew perverted, and at once become the mightiest enginery of oppression against free thought and individual rights that ever deserved the maledictions and received the curses of mankind! The monarch and the prelate always had a kind feeling for each other. The latter ever found a snug and safe place near the throne of the former; and the crown readily obtained the indulgence and approval of the writer. Each was the complement of the other; the one wielded the temporal, the other the spiritual influence, and together they compassed the entire range of human power. Religious bigotry became the normal condition, and war the normal occupation, of nations. Wars were usually those of conquest, often those of religious conquest. By conquest Charlemagne became the emperor over all the territory of Western Europe; and after his death there followed a series of wars about the succession, and the empire was soon dismembered and settled into three different kingdoms. By conquest William of Normandy made himself master of Great Britain, and afterward the crown was the subject of such controversy that it occasioned the history of England to be written in blood for many centuries, till after the battle of the Boyne it seems to have found complete rest in the House of Hanover. By conquest Abder Rhaman carried the standard of Moslem into the West, and overran Spain and parts of Italy and France, in the eighth century, till he met Charles Martell and defeat at Poitiers, and the Gospel has held Europe ever since against the Koran. The same condition of national and social life enabled Peter the Hermit to preach fanaticism to the people, and to fire their zeal with religious madness and folly, until they plunged into the Crusades and rushed pell-mell across the continent, a wild, undisciplined mob; and died by thousands from disease, exposure, and starvation. Three times was this repeated, and it required two centuries for the fever to burn out. And even then, when all was done, Jerusalem was still controlled by Islamism. After all the battles were fought, after all the victories were won, after all the defeats were suffered, the Crescent still held the East, and the Cross the West.

In the mad race for power, the sovereign and the pontiff were equally zealous; while the former with vigor pursued disloyalty and subdued weaker nations. the latter, with no less vigor, fought against heresy, and pushed his ecclesiastical prerogative into every province. The career of religious intolerance is marked by the prison, pillory, stake, and every form of suffering that hatred could devise and bigotry inflict. It slew the prophets, crucified Christ, burned Cranmer, Latimer, Servetus, and thousands of martyrs, to free thought and progressive ideas. It committed the massacre of St. Bartholomew and the horrors of the Inquisition, and it imprisoned, pilloried, racked, tortured, mutilated, gibbeted, and slew more human beings than any other ignoble passion that ever cursed mankind.

> " But war's a game which, were their subjects wise,
> Kings would not play at."

We may still have wars and bloodshed, but not the wars of subjugation. We may still have religious and fanatical controversy, but the age for persecution for opinion's sake is rapidly passing away. But that such things did occur, only proves the growth of free thought. And the more the state and church felt the need to resort to rack or stake, the more forcibly is demonstrated the frequency with which men of clear minds and pure hearts broke away from the narrow confines of ignorance, superstition, and prejudice, in both government and worship. When men are not satisfied with the dogmas of the past, when men begin to doubt, they are on the eve of a discovery. They first question, then investigate, and then demolish. The logic of yesterday becomes fallacy to-day and absurdity to-morrow. Thus are time and teaching surely and remorselessly, and with stern impartiality, sifting the past, admonishing the present, and preparing for the future; and thus all errors, in whatever department of human progress they may conceal their inharmonious forms, are sought out and destroyed, and only truths remain. What grander monuments or brighter gifts can ancestry leave posterity!

It is said that a peasant once gained admission into a royal garden, and there saw a mural painting portraying the civil classes of the kingdom,—the magistrates, the jurists, the military, and the clergy. The first class was represented by the king himself, seated upon his throne,—above him was this inscription, " I govern all"; the second by a lawyer in the dress of the court,—above him were these words, " I plead for all"; the third by a soldier in full armor, — above him was this sentence, " I fight for all"; the fourth by a bishop wrapped in ministerial dignity, with this sentiment, " I pray for all." The peasant paused before the work of the royal artist and read,—for he could read,—"I govern all," "I plead for all," "I fight for all," "I pray for all." "Yes," said the peasant, "and I pay for all." That man was a philosopher, capable of reflection. And in our time, and under our civilization, such philosophers govern the world and direct the course of events.

The aspiration to become something better is the natural force of development, and is inherent in every human being, expands his individuality, makes him independent of his fellows, creates him his own sovereign, and liberates him from all conventionalities. This is natural liberty,—the ultimatum to which this individualism leads were it not restrained by other influences and considerations, which are of two characters. First, the coercive force of power, natural or acquired, and rightly or wrongfully exercised by the superior in compelling the inferior to submit. This principle, with few exceptions, has been the cohesive power of nations until near the close of the last century. This principle does not favor, and is not favored, by popular education. Second, the intelligent perception of our needs and advantages, and the conscientious recognition of the rights of others. This principle of government is the child of Free Thought, and fosters, and is fostered, by popular education.

Society and nations organized on this basis protect all the natural rights of individuals, except such as are compromised and surrendered, for the good of the community, and given in exchange for the security thus afforded. This latter principle has for generations been supplanting ! the former, usually moving slowly, it is true, but sometimes with a bold stroke, as witness the English Barons at Runnimede, the American Independence, the Swiss Struggles, and the Abolition of Slavery.

The French Revolution was the bloodiest and most horrible epoch in all history, yet it was at once the result and cure of feudal opression and landed aristocracy in France. It gave to the peasantry the soil of France, and republicanism has been growing there ever since; and to make it permanent and successful the French have only to purify and reform their domestic lives. The general education of Germany secured the land to its tillers, and has kept that nation apace with the freest in everything but the mere form of government. The issue is now joined in Spain, and it will never finally cease till feudal give way to allodial tenures. The civilized world looks with horror upon the assassinations and other crimes across the sea, but Ireland,—distressed Ireland, wright or wrong,—will yet teach England that the lands of her lords must be divided up and made the property of the tenants.

A nation is never so secure, with a people so happy, as when her soil is owned by those who cultivate it. John Bright said, a few days ago, that the French Revolution, the American Independence, and the English Reform bill, had made the people instead of the monarch the source of power, and thus revolutionized the theory of government. The transition from the former to the latter condition of society, in government both temporal and spiritual, is the natural and inevitable issue of education, and is as sure as progress. It has rarely been sudden, has not become universal, and is yet nowhere complete or wholly secure. Even in our own time and country the work is not finished. True, the old monarchial dogma, that the king or political head is the fountain of all governmental power, has long ago been exploded; and the maxim, that governments derive "their just power from the consent of the governed," is believed, taught, and revered by us all. And power is quadrennially and biennially gathered from the people, and, in its own proper season, is returned to them again. Like the vapors of the ocean are gathered in clouds by the wooing of the sun, drift over the earth, descend in rain, refreshing vegetation and beautifying the flowers, and through rill, rivulet, and river, unite in the seas once more only to reproduce the phenomenon again, and again to perform the circuit, an endless, perpetual chain in the economy of natnre!—so have we maintained our political circulation for over a century with ever-increasing health and strength. Still men's minds must be clearer and their hearts purer, before we reap the full fruition of our independence, and develop our nation to its highest possibility for good to mankind.

So, while education has robbed the state of its arbitrary power and the church of its arrogance, it has given to the world full compensation. It has taught the common people to protect each other; it has taught them to settle their religious account, not with the curate, but with conscience. So, while it diminishes the strength of, it lessens the need for, government; and while it decimates the church organizations, it cultivates morality and elevates man's notions of nature and God, which are the very purposes of religion. I have sometimes thought it a popular error to attribute our civilization to our religion. Religion, I believe, is rather the product than the cause of civilization, and they are both the finite of education. Paganism must have had its foundation in superstition, and the inability of the ancients to worship anything not material and tangible. Judaism, which was eminently disciplinarian in its purpose and ceremonial in its form, was best suited to the character and civilization of the Hebrews. The Peruvian, in his primitive life, could see nothing better or grander to worship than the sun, which, after all, is the material god of the heavens.

Living, as we do, in a dual world, with the psychological above the physical, what could so comfort, soothe, and ennoble us as the doctrines of the meek and lowly Nazarene? In the world's need of him at that hour, and in the opportune time of his birth, we see the divinity of his coming. While we are still far off from the standard He raised for us, we only approach nearer as we grow in culture and expand in thought. It still seems that religion is not in advance, but only a few paces in the rear of civilization and progress.

A wish for union of churches appears to be another common mistake. In a nation that patronizes no creed, and protects all, with general education and freedom of conscience, it is not natural and should not be desired. It could not be accomplished without ignorance or maintained without oppression. Unity of thought begets intolerance and leads to tyranny; diversity of thought begets tolerance and leads to liberty. General education stimulates individual independence in the forms of worship as well as in any other department. Jurisprudence, which is one of the chief departments of government in its growth and adaptations, illustrates the force of education. Men early learned that they must have some common arbiter for the determination of all disputes. At first they resorted to the usages of battle, but it was soon strikingly evident that strength was not always justice, and weakness not always a fault. Then the disputants were allowed to appear by champions in the fistic arena. This was abandoned as unsatisfactory. It was doubtless too hard upon the advocates, I am sure if this were still the practice, so many schoolmasters would not become lawyers. Afterward trials were by ordeal, until it was discovered that the lucky were not always right, and that the unlucky were not always wrong. At length it began to dawn upon the intellect, that the best thing in all this world was a just and upright man, and that it was safest to leave to his judgment the most intricate question, and to his honor the most sacred trust. This system is not yet perfect, — it is only growing.

An old man, brought from his quiet, useful life to the court-room, as a witness, by subpœna, is about to give testimony in some cause in progress of trial. His name is called, and with hesitation, almost awe, he approaches the august presence of the Judge; he holds up his hand, and, with great solemnity, swears before Almighty God "to tell the truth, the whole truth, and nothing but the truth," and, with reverence he takes the witness-box, honesty and candor lighting up his inexperienced brow as he firmly resolves to tell the truth and nothing more. At his very first word, "We object" comes from Messrs. Quirk, Gammon, and Snap, attorneys in the case. Again the old man, with less firmness, starts to tell his story. "Hold on" greets him from the other counsel in the case. Much shaken in his self-confidence, and suspecting that the truth may not be the proper thing in that place, the witness once more proceeds. "Not that,—you must not tell that," sternly interposes the Judge. And so the witness is buffeted back and forth by opposing counsel like a shuttlecock between battle-doors, till at last he leaves the stand with a confused notion of having told nothing he intended to tell, and everything he ought not to have told, and thoroughly convinced in his own mind that the truth was not wanted at all, and vowing to have nothing to do with law and lawyers, judge and jury evermore. And yet the same man, when he finds, or fancies, his rights invaded, and his blood is up, seeks out, as he thinks, the best lawyer he can find. He says he will spend the whole subject-matter rather than yield. He declares he would rather the lawyers than his adversary should have it, and his attorney invariably agrees with him in this sentiment.

Men very rarely go to a solicitor for counsel or advice, but nearly always for justification and advocacy. Still, courts are to society a kind of safety-valve, like the volcanoes are to the earth. As individual rights are developed, and individual transactions are multiplied, and domestic, commercial, financial, social, and industrial relations are complicated, by educational force, controversies necessarily arise more frequently, and we must have some tribunal in which they can be settled. And imperfect as man is, with all his passions and dullness, it is a thousand times better to resort to a court of disinterested judge and jury, than to brutally disfigure each other in fight, or blunt our sense of justice by the shifting chance of a lottery. Jurisprudence has not been insensible to the growth around it, and the courts have not been stationary, but their movements have become more intelligible, their forms more flexible, their precedents more general, their rules more adaptable, and their principles more equitable. As the schools have enlarged science, developed arts, improved mechanism, and diversified industries, the courts have fostered the new and defended the old against the encroachments our energies are constantly awakening, and preserved a healthy harmony throughout the whole.

A most striking example of the effect of education may be seen in a comparison of the mechanism, inventions, and arts of the ancients and mediævals with those of present civilization. Then, as before suggested, individuals were of no consequence, except as things served the purpose of the government; now governments are of no consequence, except as they protect and care for the individual. Hence, in the former condition of society, there was great unity in labor and construction, and little diversity in skill and design. Excellence consisted in magnitude. All enterprises were national; all monuments were for the Commonwealth; all decoration, embellishment, and improvement were for the sovereign or for the State. All arts, achievements, and all events that went into history, or left their ruins upon the flood of years, were under the patronage of the prince, and were usually idealistic and not practical. The Colossus of Rhodes, the Pyramids of Egypt, the Temple of Diana, have long been classed among the wonders of the world, but antiquarians have never been able to find in them any noteworthy design, much less utility. However they may challenge our admiration, they scarcely inspire us with respect for a civilization that leaves no other monuments. The pyramids may have been the mausoleum of kings, but why should a nation do so much more for dead royalty than for living commonalty? The Coliseum at Rome was no doubt a favorite place for superb entertainment, but had no tendency to exalt public sentiment or to purify public morals. I think it did less for Rome living than its ruins have done for Rome dead. The Chinese wall is a result of coöperative labor and sustained effort; so are the castles and cathedrals of the middle ages. The former was a formidable fortification in its time, but now such a work would hardly be necessary, and surely inefficient. The latter indicate superb architectural knowledge and skill, but were not intended to serve any useful purpose for the common people.

Greece and Rome had some unequaled sculptors, unrivaled architects and some matchless painters, whose works demonstrate the ideality of the artists of those days, but there is not much else in their civilization worthy of emulation. They had no pleasant homes, with carpets, furniture, decorations and adornments for the common people, like those which now charm the eye and gladden the heart wherever modern civilization extends. They lived for the State alone; there was no general education, no individual enterprise, and the era of inventions had not yet dawned. In all undertakings of any magnitude, it required aggregation of individuals and continued effort in ancient times as it does now. But there is this difference: Their large achievements were ideal and useless, because accomplished by tithes, burdens, and tributes, exacted by superiority from inferiority; and secured without expenditure, they need not be remunerative. Ours are practical and useful, because done by labor, for which capital pays wages; and thus secured upon fair compensation, they must of need be a source of revenue, in order that the profit may be commensurate with the cost, for this is the fundamental principle in the great world of exchange. In a country where all men are equal before the law, with individual tastes developed, and individual opportunities abundant, and resources unlimited, in the very nature of things, there can be no coöperation without just compensation. No useless colossus bestrides the East River, but the two cities of the metropolis are bound together by the largest suspension bridge in the world, bearing upon its stout cables throngs of pedestrians, crowds of vehicles, and rush of steam-cars, far above the commerce of nations lying at anchor in the waters beneath.

Now the telegraph and railroad, in the transmission of intelligence and in the transportation of merchandise, have eliminated time and distance, and at morn and at eve bring to us the fresh thoughts of mankind, and pour into our laps the market of the world. We do not now construct gigantic towers, long walls, and huge pyramids, (I regret to say that a century has passed away and even the monument to the Father of our Country is yet incomplete). But we dig down hills, fill up chasms, tunnel mountains, bridge streams, make railroads, steamships, and canals, exhume treasures from the bowels of the earth, hold telephonic conversations between distant cities; and the wheels of industry hum in thousands of factories, and our broad country is every year covered with the richest harvests. We do not build magnificent cathedrals, but we have schools and churches dotting hillside and valley like stars in heaven on a clear winter-night. It is significant that gunpowder was invented before printing. The former was the first of its age, the consummation of dynamics; the latter was the natal star of the new civilization. Robert Fulton did more for the human race than did Alexander the Great, Morse did more than Hannibal; Lavoisier scarcely less than Julius Cæsar, Newton and Franklin more than Cyrus and Charlemagne. We have reduced govermental restraint to its minimum, and developed individual rights to their maximum, and are stimulating diversity to the highest possibility.

It would be strange indeed if a potentiality so insidious, so universal, so irresistible as educational force, should make no improvement in the methods of propagating itself. While it revolutionizes government, reforms religion, reorganizes society, and impels arts and mechanism on a grander career, why should it not also import a new life to teaching? Surely it has done no less for the school than it has for church and state! In the earlier conditions of society there was no effort made to improve succeeding generations. The accomplishment of each died with it. There were no books through which the father could hand down to the son the knowledge acquired in a lifetime. Consequently there was no educational highway, along which the lines of the great and the wise stood out as guideposts to posterity. Jugglers, diviners, magicians, and conjurers thrived upon the credulity of the earlier races. Then followed the schools of the priests, which were devoted mostly to ecclesiastical pursuits; those of Judea exclusively so; those of ancient Egypt, however, made some advancement in science, such as observing and registering facts and revolving theories. They thus became a source of enlightenment to surrounding nations. Greece borrowed wisdom from the Egyptians, and afforded some opportunities for her first teachers and philosophers. In this way Greece first, and Rome afterward, developed the science of secular education. Socrates, Plato, and Aristotle mark the epoch in Grecian civilization, and Cicero, Seneca. and Quintilian in Roman civilization, most important in the history of pedagogics. But training was special, and designed to mold the pupil after some ideal of the teacher, or to fill some distinctive station and was as often repressive as expansive in its nature and effect.

Education in the middle age was also special and was directed in one of but two channels, — the one leading to the cloister, the other leading to the castle. The common people were not thought fit subjects for culture, and every young male aristocrat was trained to be either a monk or a knight. The monasteries may have kept the lamp of knowledge burning, and may be entitled to some honor for thus protecting the flickering flame from total extinguishment in the darkness that enveloped that age, but they are not entitled to much credit beyond. They thought a rigid, hard, unnatural, and constrained mental and moral discipline. The most important part of the curriculum was to write psalters, missals, and breviaries to study the treatises of the fathers, to read the sermons of the abbots, and to participate in the useless, tedious, and elaborate church ceremonies. The rod was used mercilessly and with impartial severity. I fear there are some teachers yet who in this respect are of the old monastic school. On the other hand the young knights received very little intellectual or moral instruction, but were taught gymnastics and calisthenics, were taught to box, to hunt, to fish, to ride, to run, and to shoot with the bow and arrow. The young monk was denied the companionship of ladies, and taught to regard them with indifference or aversion. The young knight was inspired to his noblest deeds of courage and gallantry by the smiles of his lady-love, and was taught to look upon her with adoration. What an unequal and unjust apportionment of the joys of this life, and how stupid in the monks to submit to it! Up to this time I believe woman was not thought of in the training and culture of mankind. I suppose, as she could be neither a monk nor a knight, it was concluded useless and prodigal to waste instructive genius upon her. Erasmus, I think, was one of the first to maintain that it is as necessary and important to educate the girls as it is the boys. When we study the special endowments of woman, her fine sensibilities, her quick perception, her gentle patience, her keen sense of right and wrong, her ready sympathy, we wonder at the folly of so long neglecting her. It is no matter of surprise that, with all these special aptitudes, she is regarded now as man's superior in the training and culture of children.

But there has been a revolution in modern times in the science of pedagogics. Among the many bright names through whose genius it has been made possible are those of Comenius, Locke, Francke, Rousseau, Kant, Richter, Pestalozzi and Froebel. We no longer drive, we no longer,—thanks to Frederick Froebel,—always lead; we often follow after. The teacher is not a master, seated upon a throne, clothed in awful majesty, wielding fierce authority and inspiring terror; but he is a counselor, companion, and friend. The pupil is no longer a constrained, timid, cowering little wretch, often a culprit without fault and without intent, but he is docile, loving, and confiding. There is little for the model teacher to do but to supervise the natural growth of his pupil,—and this is much. He never commands, rarely directs, sometimes leads, often follows, frequently suggests, and always accompanies. He does all this without effort, and without disclosing his purpose, invariably winning the obedience and affection of his pupil without struggle or consciousness upon his part. Under the kindergarten culture, study is pleasure, labor is play, and the schoolroom is a toyshop!

It has been said that there is no royal road to education. But a pathway leads there, so smooth, so natural, so easy, so lined with flowers and overshadowed with foliage that fatigue never attends, and pleasure always accompanies those who walk therein. I know that when water ascends from the base to the summit, it is forced, it is inert, heavy and dead, inactive, reluctant and escapes at every crevice, and loses a portion of itself at every revolution of the machinery. I know, too, that when water finds its way down, it has the qualities of life, velocity, and momentum, and moves with measured regularity, or leaps from higher to lower elevation with impressive grandeur, or ripples over shingles and shells in sparkling brilliancy, "a thing of beauty and a joy forever"! It is libel upon nature and blasphemy of Nature's God to say that humanity of itself inclines to go wrong.

The modern science of pedagogics is, I regret to say, however, in advance in the art of teaching. There is still too much knowledge, and not enough wisdom; too much learning, and not enough training; too many great souls in sickly bodies; too much time to dead language and not enough to living physics. I believe it was Madame De Stael who said: "Were I mistress of fifty languages, I would discourse in the noble Greek, think in the deep German, sing in the majestic Spanish, converse in the gay French, write in the copious English, and make love in the soft Italian." In this country the English will serve the last purpose quite as well as the Italian. Indeed, it is a satisfactory substitute for all the others. It is the eclectic language chosen by Progress. I think, in its future career, it may absorb all others, just as it has destroyed its own dialects and is swallowing up its own provincialisms. I do not say that other languages should not be studied for the rich literature in many and for the relation they bear to the English, and that they should not constitute the chief course, as they do in many institutions of learning. We still try to *make* scholars, lawyers, doctors, preachers, and merchants, rather than to develop natural aptitudes. We may *grow* these specialists, but our teaching does not *make* them any more than binding a board upon a Laplander's brow will make him a Flat-Headed Indian. Improve the natural individual and the professions will be filled by natural selection and their fruits increased many fold.

Our schools, our churches, and our institutions, in this country, through some fault, organic or otherwise, evolve two ignoble passions that overshadow and sometimes overwhelm our lives. I allude to these distinctive American traits, — to get rich, and to hold office. Every young American wants to get rich, — to get rich quick, — to get rich out of nothing. He first, perhaps, wins prizes in the schoolroom, under the sanction of the teacher; then enters the Sunday-school lottery, or church fair, and gambles under the sanction of religion; then buys Chicago grain margins, or Wall Street stocks, and gambles under the sanction of business; at last, perhaps. plays policy, or deals in a faro-bank, and gambles under no sanction whatever. I know that political economists make a distinction, and that it may seem unjust to make this indiscriminate classification. Nevertheless the whole prize system is pernicious, and, in this country, there has arisen a feverish, uncertain, and speculative condition of life that is surely corrupting our public morals and threatening our nation. Competitive prizes in the school-room usually stimulate those who at times ought to be restrained because of precociousness, and discourages those, who can never win because of natural dullness. To use them as an incentive is a confession of weakness, — not to say incapacity, upon the part of the teacher. The hope of gain is often as debasing as the fear of punishment. I have no respect for action incited by either motive. It is too much like that kind of religion that has no foundation but the fear of a fire-brand, or bribery with a crown.

Some one has said that we are all politicians, from the cradle to the grave. In a certain sense this is as it should be, — in the sense of prudent, zealous, and patriotic interest in our country's welfare. In another sense it is a foolish, unhallowed, American chacteristic. The inordinate desire to hold office seems to be either active or latent in the heart of every man, — and some say women also. Some constantly hear their country's call and are ready to sacrifice themselves upon the official altar at every election. Others are stirred up by some newspaper puff, or the flattery of friends, and their peace is gone, and they at once study the art of hand-shaking. All this is foolish in the extreme, and, we are painfully sensible, leads to corruption also. Office obtained without effort, and surrendered without regret, is indeed a distinction, and secures respect and even reverence. But office for which manhood is bartered is but a mark of approbrium, and a target at which malice hurls its calumny. We ought to rebuke the common practice of holding out to every little schoolboy in the land, as an incentive to study, the promise that he may become a president, or a congressman. It is a blessed thing that he does not understand the avenues that lead to these goals of his childish ambition, or it might chill his ardor and shock his morals. Some years ago I knew a school-boy whose chief regret was that he lived in a country where he could aspire to nothing greater than the Presidency of the United States, which was within the reach of all his schoolmates, so his teachers said. He grew older and wiser, till he lowered his standard of ambition and felt he would be satisfied with a senatorship or a seat in the legislature even. He grew older and wiser, and while his ambition was still lower, it was surely nobler and purer than before. I know him yet better than all others. He now feels, if he can lead a useful and honest life, and care for those dependent upon him, and do some little part, no matter how obscure, to aid in making those around him wiser, happier, and better he will have accomplished his mission and will be satisfied with his career. That God will prosper him according as he follows his better conviction, is my prayer! While we see our faults, let us correct them, and not forget that our way is downward. While we stand upon the bank of a river, let us not look at our feet where the reactionary eddies drift backward, but let us look beyond where the mighty current in the center flows on, and on, with a momentum that carries all before it. Our destiny is a hopeful one, and there is in spiration in faith in each other.

In closing I want to say something to which all teachers will agree. Teachers are not paid enough. In proportion to the order of talent required and the amount of labor to perform, you are the most inadequately paid of all the professions, —pardon me, except lawyers. But now is the time to stand to your post and not desert, for you are fast teaching society to appreciate you. When you are known as you deserve to be, which will be ere long, the successful teacher can fix his own compensation. Teachers, you are greater than the British Parliament, the German Reichstag, the French Chambers, the American Congress! You mold a public sentiment, and legislation harmonizing with it is almost needless, and legislation antagonizing it is almost useless. Without the sanction of public sentiment, laws are a dead letter upon the statute-book! Teachers, you must hold in your care those who are to initiate the Twentieth Century; may it be greater and grander for the human race than all that have gone before! The world looks to you as the ministers of education, that agency which has converted mankind from primitive savagery to a civilization whose grand phenomena startle us with new surprises every day. You direct that educational force that makes monarchy no longer absolute, but limited and constitutional; that melts aristocray into democracy, and desires offices no longer hereditary, but elective; that destroys the tyranny of statecraft, and the superstition of priestcraft; that dethrones the monarch, and crowns the freeman; that takes from the favored few their prerogatives, and blesses the many with self reliance and independence; that diminishes followers, and multiplies leaders; that levels all castes, and makes franchises universal; that uproots all ancestral, patrimonial, accidental. and fancied distinctions, and creates the peerage of the common people.

HIGHER EDUCATION OF WOMEN AT OXFORD UNIVERSITY.

BY SARAH K. BOLTON.

What Sir Richard Steele said in the *Tatler*, of Lady Elizabeth Hastings, " To love her was a liberal education, " may well be applied to living at Oxford. To walk about her streets, rich with the romance and pathos of ten centuries; to read daily in the Bodlean Library, with its 400,000 books and 26,000 choice manuscripts; to breathe an atmosphere promoted with the best thought of twenty-four colleges; to linger in St. John's five acres of flowers; to see day by day the places where Addison walked, and Locke, Bacon, Coleridge, Shelly, Southey, Froude, Ruskin, Gladstone, and others laid the foundation of eternal fame; to *live* in such a place is well nigh a university education.

Oxford never seemed so beautiful to me, as when, last year, I went down from London to see her colleges for women, Somerville Hall and Lady Margaret Hall. The railroad passes for sixty miles through a picture-like country; through great fields of yellow Italian clover, or white daisies, or red poppies, while far away through the luxurious green of the trees rise white, chalky cliffs. Oxford is especially attractive in summer. Nature, with her flowers and ivy, seems to link the crumbling walls of a past age to the life and hope of the present. We sat for sometime in the grounds at Balliol, the second oldest college at Oxford. The grass was like a pink carpet, so covered was it with the fallen blossoms of the horse-chestnut trees. This college, the first perhaps in intellectual progress at Oxford, — it is expected that every graduate will take honors, — was founded 600 years ago by John Balliol, who left his wife, Devorgilda, to carry out his plans. As late as 1870, a lady gave $45,000 to the college, besides endowing ten scholarships. Had she lived till 1880, she might possibly have given it to help her own sex.

Most of the Oxford colleges are rich. Christ Church College posseses 29,959 acres of land, and the Dean's yearly income is $15,000. New College, founded in 1379, owns 17,057 acres, and the Warden's salary is about $11,000. The President of Magdalen receives nearly $12,000. From the beautiful tower (150 feet high) of this college, which stands in a grove of 100 acres, every May morning at five o'clock a Latin hymn is sung, while hundreds gather below to listen. Some think the custom originated in the saying of Mass for Henry VII.; others, that it is a relic of the sun-worship of the Pagans.

As we passed along the street, hundreds of students, in their black gowns and flat caps, gave the place a unique appearance,—a fashion which I hope may never prevail in America, where there should be no class distinctions by reason of education. It should be our boast and pride in the future, that nobody can live in our midst and be ignorant.

At last we reached Somerville Hall, named for Mary Somerville, a large, homelike building, covered with wisteria and honeysuckle, set back from the street, as is the English custom, in the midst of three acres of ground. The property was purchased of St. John's College, for $35,000, and $25,000 was soon raised for a new building, just completed. The rooms are tasteful and the occupants seem very happy. There are very few rules. The first term began in the fall of 1879, with 16 students. After two years study under Oxford professors, the young ladies took the "University Local Examinations for women over eighteen." One gained a first-class in Honors in Modern Languages, and two others, a second-class; another took a second-class in Modern History, while in the First and Pass Examinations not one failed. To take honors requires two previous examinations, a First and a Pass. The First necessitates an examination in English, any two languages, Latin, Greek, French or Italian, German, Arithmetic, Euclid and Algebra. The Pass has six sections, and the candidate must give satisfaction in languages, and at least one of the other five sections. An Honor in classics means to read the Georgics and Æneid of Virgil, Horace, Cicero, Pliny's Letters, twelve books of the Odyssey, four pages of Sophocles, four of Euripides, the De Corona of Demosthenes, and Eschines in Ctesiphontem; to read Greek or Latin at sight, and to prepare papers on the philology, grammar, and composition of the languages. An Honor in Modern Languages means, in German, a paper on several of Wachernagel's works, Schiller's *Wallenstein*, *Wilhelm Tell*, and others; Goethe's *Faust*, Lessing's *Nathan the Wise*, *Laocoon*, etc. In French, Joinville's *Mémoirs*, Molière, Corneille, Racine, Voltaire, and Sainte Beuvé, or Spanish or Italian. These "examinations correspond in point of difficulty with the University examinations," says Miss Shaw Lefevre. The able principal of Oxford University will doubtless eventually offer to women the same examinations which she gives to men, as does Cambridge.

There is at present no entrance-examination at Somerville Hall.

No student is admitted under seventeen. The institution is undenominational in principle, the students being expected on Sundays to attend a place of worship chosen by themselves or their parents. The charge for board and lodgings is $315 for three terms of eight weeks each, and the lecture fees are $75 yearly. There are several scholarships of $150 and $200 a year,

When there are a sufficient number of ladies from both Someville Hall and Lady Margaret Hall to form a class in any subject, the lectures are given in class-rooms provided for women. If the number is small, as in chemistry, they recite with the young men, some lady from the Council accompanying them. This would of course seem unnecessary, either at Cambridge or in America. Oxford is as yet conservative, though she has many noble spirits working for the best good of women. Some University lectures are open to women; Christ Church College Science lectures, the University Museum lectures in Science and Mathematics, etc.

LADY MARGARET HALL

was founded in 1879 for those who desired "the protection and training of an academic house on the principles of the Church of England, but with provision for the liberty of members of other religious bodies." It is named in honor of Margaret Tudor, Countess of Richmond, founder of St. John's College, Cambridge. It is a beautiful stone building, recently enlarged by a $14,000 addition. The interior is in delicate blue and buff. The pictures show the love of art of the principal, Miss Wordsworth, who has traveled much in Spain and elsewhere. She is the daughter of the Bishop of Lincoln and a relative of the poet. The grounds in the rear are large, and on the day of our visit presented a most attractive appearance, with a party of girls in pink and white dresses, playing lawn-tennis. I never could see any reason why a girl who reads Greek and studies higher mathematics should not wear tasteful clothes and have a pretty face.

Family prayers are conducted at 8 A. M. and at 8.45 P. M., with two Bible classes weekly by Miss Wordsworth. Several young ladies have obtained honors. One has been appointed to the headship of Alexandra College, Dublin. The expenses of Lady Margaret Hall are $375 yearly, besides $75 for lecture fees. Each student has one room, a sitting-room and bed-room combined, and there is a common sitting-room.

At present there are about sixty young women attending lectures at Oxford. Several board outside the halls. Ten obtained honors in 1881; one a first-class in French and German, and five a second class in Philology, History, English Language and Literature, or French and German. Miss Seward of Somerville Hall being under eighteen, and thus obliged to offer herself for the London University matriculation, received the Gilchrist exhibition of $150 for two years, awarded to the woman standing highest. Both Somerville Hall and Lady Margaret Hall have the respect and coöperation of the University, and are proving to the people that women need and profit by the best education the world has to offer. Perhaps half the students intend to teach, but whether they do or not it is certain that they will be better members of society from this training and broadening of their minds.

I have been asked how Girton and Newnham, London University and University College, St. Andrews, the Oxford colleges and others, compare with our own institutions in physical training for girls, expenses, and advantages in scholarship. We are certainly not behind England in physical exercises as far as appliances are concerned. At Wellesley College the young women are required to spend an hour each day in boating, archery, walking, ball-playing, grace-hoops, or lawn-tennis. The Wellesley students, in their sailor suits trimmed in red or violet, in their colored boats, rowing and singing at sunset, make a picturesque scene. At Vassar, with its 200 acres and miles of gravel walk, and boating on its lake, there is admirable recreation. At Smith, as also at Vassar, there is a well-appointed gymnasium and bowling alley. At coëducation colleges, women have the same opportunities for physical development as men. At Girton and Newnham there are gymnasiums, but lawn-tennis and walking are greatly preferred. When our American girls can take a walk of eight or eighteen miles, in short, singly-trimmed dresses, as the English girls do, we shall have a more vigorous race. Cambridge men usually walk or row from two until five o'clock. In University College, London, a course of lectures is given to women on hygiene, the causes of disease, the hygienic management of the body, the influence exercised by air, water, food, baths, exercise; the warming, lighting, and ventilating of dwelling-houses; the salubrity of towns, the prevention of epidemic and endemic diseases, — illustrated by models, diagrams, etc. A similar course should be given before every college in the country. We have spent a great amount of money in America to cure feeble women. In the next century we shall use the money to prevent their becoming feeble. There is no reason why girls should not play ball in pretty gymnastic suits, or swing clubs, as fortunately they are now doing in many of our high-school gymnasiums. Thousands have been sacrificed to a mistaken idea of having lady-like (?) manners. Exercise should be as compulsory as study.

As to expense: At Girton the charge for board, lodging, and instruction is about $500 yearly; at Newnham, about $400; Somerville Hall ,nearly $400; Lady Margaret Hall, $450. At University College, board is at the usual rates, and fees vary according to subjects. For matriculation in Latin, one term, $11.00,—for the year, $31.50; for honors, $15.75; for two lectures a week in English language and literature, $21.25. At Vassar the expense is $400; Smith, $350; Wellesley, $275. At Harvard Annex the tuition is $200 for five courses of two hours each, per week, or $75 for a single course.

It will be seen that the expenses at Girton are the highest; but it must not be forgotten that she alone has the *same* entrance-examination as Cambridge men, and an identical course of study with them, so that there can be no doubt as to the educational standard of her graduates. For a century to come, when the course for women is not identical with men, there will not be wanting a large number who will claim that is is an inferior course.

As to the advantages for study abroad, old institutions, with immense libraries, and incomes sufficient to command the best talent of a country, will always offer superior opportunities to students. To study under Professor Jowett in Greek, Max Müller and Sayce in Philology, Rawlinson in Ancient History, Bonamy Price or Fawcett in Political Economy, or Seeley in Modern History, is no small thing. Some of our own institutions are admirable in their scope and aids to learning, like Johns Hopkins, Harvard, and Yale, but these are not yet open to women. As to classics, Greek and Latin are electives at Wellesley in all save the freshman year. If the student works for honors, the senior year requires Cicero, Lucretius, Pliny, and selections from Æschylus, Sophocles, Plato, and Aristotle. At Vassar, Cicero, Herodotus, Thucydides, Plato, and Sophocles are required. At Smith, Greek and Latin are electives in the junior and senior years, with the opportunity of taking Plato's Phædo two hours a week in the fall term; Latin selections two hours a week in the winter term, with neither in summer. In Boston University, Greek and Latin are electives in the junior and senior years, while in the sophomore three hours a week are given to Greek, Demosthenes, Thucydides, Æschylus, Sophocles, and Plato, and ten hours a week to Latin. At the Harvard Annex the classical course is ten hours instruction in Greek in Plato, Æschylus, Sophocles, Homer, and Herodotus, and the same time given to Latin.

A classical tripos at Girton College means much more than this, as some of the exercises for last year's examination will show: (1) Three hours devoted to Plato's Republic in Greek (his views as to to the cause of evil; his limits to communism, etc.),—the answers to be translated. (2) Three hours to translating Terence, Lucretius, Ovid, Lucan, Juvenal. (3) Three hours to Aristotle's politics in Greek, and to Cicero. (4) Three hours to Pindar, Aristophanes, Sophocles, etc. (5) Three hours to Greek Iambics. (6) Three hours to Quintilian, etc. (7) Three hours to Classical Philology,—"The general characteristics which distinguish the Indo-European from the other chief families of languages," etc. (8) Three hours to Latin Hexameters. (9) Three hours to Herodotus, Thucydides, etc. (10) Three hours to Ancient History, — one question being, "Trace the effects of the Theban Supremacy upon Greece, and compare generally the position and aims of the various States at the conclusion of the Peace of Callios and on the accession of Philip of Macedon." (11) Three hours to Greek Prose. (12) Three hours to Virgil, Horace, Tacitus, etc. (13) Three hours to Latin Prose. (14) Three hours to Homer, Æschylus, Euripides, Demosthenes, and Polybius. After a young woman has passed this examination, I think there can be no question either as to her mental capacity or knowledge.

In science at London University, and mathematics at Cambridge, we find the same high standards. In the latter, the examinations continue for nine days, six hours each day, "beginning with the Differential Calculus, and going up to the highest calculations of astronomy and optics." Mr. Hazeltine says, in his *British and American Education*, after speaking of the studies required for the first three days, "The topics of examination on the fourth day, and last five days, are arranged in five divisions, in each of which numerous original problems are propounded. One section of the ground here traversed comprehends analytical geometry, spherical trigonometry, the differential and integral calculus, finite differences and spherical astronomy; a second section comprises the higher parts of algebra, and of the theory of equations, elliptic functions, the calculus of variations, and the theory of chances; a third division is concerned with the ninth and eleventh sections of Newton's *Principia*, Book I., with lunar and planetary theories, the higher parts of dynamics, and Laplace's coefficients, with attractions, the figure of the earth, and procession and mutation; in the fourth division are classed hydrodynamics, physical optics, waves and tides, the vibrations of strings and bars, the theory of elastic solids treated as continuous, and the theory of sound; finally, the fifth division of subjects includes heat, electricity, magnetism, and the expression of arbitrary functions by series or integrals involving sines or cosines. In each branch and sub-branch of work the examination at Cambridge is searching and vigorous, and no man who is not proficient in the whole circuit of study can hope to see his name even in the class of senior optimes, much less in the list of wranglers."

Several young women from America are studying at Cambridge and Oxford, with credit to themselves and to us as a nation. The number of women asking for broader learning is increasing every year. At Oberlin there are nearly 500 young ladies; at Boston University, 156; at the University of Michigan, 128; at the University of Wisconsin, 112; at Cornell, 54. All honor to these institutions, and many more, which have opened their doors to women, giving them equal opportunities with men for acquiring knowledge and the means of self-dependence. Wellesley has about 400, and Smith and Vassar about 300 each.

The question is not whether it is wise for women to seek this higher education. The fact is that they are seeking it. The question is rather, "Shall America give its best opportunities for education to women, or compel them to go abroad for study?"

PRIMARY EDUCATION: WHAT AND HOW.

BY HON. HENRY A. RAAB.

When you ask the inhabitant of a city, "What school facilities have you in your place?" the answer will invariably be, "Oh, we have an excellent high school," as if secondary education were the principal concern of the community. The answer is generally given with a good deal of pride and satisfaction, but very rarely have I been told that the primary schools were excellent. If you examine the course of study for high schools, you will in many cases find that some elementary branches are taught in these schools; that spelling, penmanship, and elementary arithmetic form part of the curriculum; that the habits of discipline and study are anything but what we may reasonably expect in a high school.

These facts show that primary education does not receive its share of attention; that, in many instances, the top receives the good will and support of the people, the labor and fond care of the teachers, while the foundation, the primary school, the school of the great majority, is neglected. Hence all the shortcomings of the high school mentioned above; hence the want of intelligence and skill of the mass of the people. If any part of education deserves the fond care and cheerful support of the people, it is the primary school, for it is the school of the greater number; it is, also, not too much to say that, if the work in the primary school is of the right kind, the higher eduuation will take care of itself; you cannot build a solid superstructure if you have not first laid a solid foundation. By these remarks I do not wish to be so understood as if I was hostile to the high school; no, I fully believe that the high school is a part of the common school system and deserves the good will and consideration of the citizens, as well as school officers. All I desire to say is, that the high school should not be fostered at the expense of the primary department.

I have proposed to myself to present in as concise a form as it is possible, in the space allotted, the *what* and the *how* of primary education, claiming for my paper neither novelty nor originality; for I am well aware that what I am going to offer has been felt and partly acted upon by conscientious, progressive teachers.

What is the aim, scope, and method of the primary school? This eminently important question craves a definite answer, the more as we hear daily the most heterogeneous and conflicting demands made upon it.

One class of men demand that some agricultural science be taught in order to prepare our farmers the better for their work; a second class thinks elementary political economy should find a place in the curriculum, so that future generations may judge the better the social relations of life; a third class expects that the school prepare for the trades and industries, so that our young people find bread in shops and manufactories. Physicians desire that the school lay greater stress upon teaching the principles of physiology and hygiene, because the prevention of disease seems to them the most important; lawyers lament over the flagrant ignorance of the laws existing among the population, — a late governor of one of our western states recommended in his annual message to the legislature that the penal code be made a text-book in the school; the prohibition folks want instruction given in the use of stimulants and their evil effects upon the human system; and thus complaints from every quarter are urged against the school. The school is made the scape-goat that has to bear all the burdens, and upon which every one heaps the blame.

It seems to me unnecessary, in addressing school-men, to argue that most of these demands which are made upon the school cannot be fulfilled, and will forever remain unsatisfied. You may enact the most magnificent laws on behalf of the schools; there will forever be certain insurmountable barriers, which render it impossible for the common school to meet these demands. These barriers are partly founded in the imperfection of human nature in general, partly in the social conditions under which the children of the public school grow up, and partly in the average mediocrity of the intellectual faculties of children, and partly in the difficulty of class instruction.

The gentlemen who ask that the public school should realize their lofty ideals ought to visit some of the schools in rural districts, or in certain portions of our populous cities, where sixty and more children of all ages and stages of advancement, often from the most depraved families,— are crowded together; they would soon be cured of their lofty ideals and be well satisfied, if the minimum of attainments laid down in our course of study could be reached. I hope that teachers and school officers will not be led astray by these conflicting opinions and demands, but will, like the pilot who looks to the polar-star and compass to guide his vessel along the cliffs and through the shallows of the sea, steer their course into the port of safety. Our compass is the Science of Education, which tells us what to do, and what not, and what the needs of the school at present are. "And what are these needs?" you will ask. "What are the demands that to-day, more than ever, are pressed upon the primary school?" When I attempt to give an answer to these questions, I say candidly that I do not hope to be able to meet the expectations of all. I did not prepare this paper with this in view; for to satisfy all is impossible. I believe in the old adage, "Try to please few; to please many is evil."

Permit me now, in a few simple paragraphs, to indicate what I regard as the aims and scope of primary-school work from my individual standpoint, and what I consider the prime conditions of success according to the experience which I have been able to gain in my school work. I then ask the reader to examine and test my opinions without prejudice, and to put into practice what seems worthy of acceptance.

The first and most important requirement in the education of our children is the moral training; for what avails all knowledge, all ability, all learning, all skill, when the man's heart is depraved, and the will-power is exerted in the wrong direction? An old writer says: "On the day of judgment, the great Judge beyond the stars will not ask, What have you read? What have you studied? How many languages can you speak? How well can you preach?—but, How have you lived? What have you done? All great educators, from Montaigne down to Herbert Spencer, have considered the moral training of the young as the principal aim; and the great Teacher of teachers has expressed this idea by, "Be perfect even as your Father in heaven is perfect;" *i. e.*, be all that your powers enable you to be, live, grow, and perfect yourselves in the doing of noble acts, in living a spotless life. There can be no doubt the morality of youth must be the highest aim of all training, and to-day and in this free country of ours more than ever. I do not like to look at men and things through dark spectacles, but I ask, Is there not evidence that the virtues of faithfulness, of honesty, of truthfulness and strength of character ought to be fostered and cultivated?

How many persons are there now-a-days who act politely and kindly to your face, and behind your back talk evil of you,—nay, write evil of you, too! How many promises are made merely to be broken! Many are overflowing with words of honey, and at the bottom of their hearts they are deceiving themselves, and making a mockery of truth and honesty. Money, honors, and amusements are the idols of our time, the moloch which men worship as the Israelites did the golden calf in the desert. People are over-anxious to make great fortunes in the shortest possible time in order that they may lead a life of ease and frivolity. Thence the speculations in stocks and grain-gambling, and "puts and calls," and the consequent defalcation and absconding clerks, treasurers, and cashiers. And this egotism, which respects nothing and finds its gratification merely in the possession of money and the enjoyment of pleasures and ambition, is fostered by the hot contests in politics and religion, where the good of the party or sect alone is concerned, and the welfare of the community is lost sight of; where power is the all-absorbing interest, and the individual is disregarded. The more we complain of this sad condition, the more needful it seems that we should emphasize rigid moral training and sound school discipline.

We teachers must contribute our share toward rearing the children to be trustworthy and courageous men and women, that cannot be bent and shaken by every breeze of the times. And, in the first place, we must counteract the vice of untruthfulness, the habit of lying in every shape and form. Children must be reared in veracity and sincerity. Then, the second demand is a love of solidity, simplicity, and frugality, — that we educate the children to despise all outward show and ostentation, because these latter pretensions and effects are untruthful acts, and certainly to be deprecated the same as untruthfulness in words.

Next, our young people must be taught to revere and honor authority, be it vested in men or in institutions. Read the reports of the daily papers, and you will see how crimes against life and property are everywhere fostered and produced by a disregard of the law. "Stranger, tell the Lacedæmonians that we lie here, *in obedience to their orders*," is the simple inscription placed on the monument erected over the dead bodies of the three hundred who fell in the battle of Thermopylæ. Obedience to the law is very little practised to-day; neither the statute nor the moral law is regarded; every one wants to do as he pleases; every one wants to be the law unto himself and others, but will not submit to the law of the State. Self-righteousness is the characteristic of the times. Hence the contentions against authority, the disobedience of employés against employers, the disregard of school and family, and the dreadful want of reverence toward old age and the venerable. Must I strengthen my assertions by example? You pass by the pupils just dismissed from school, and listen to the conversation of half-grown boys, and observe how even girls push older people from the sidewalk; how some talk to well-meaning older people who criticise their behavior and upbraid them for their vicious conduct, and you will admit that the outlook is sad.

And what can we do, what can especially the school do, to check this wave of irreverance, frivolity, and lawlessness? In the first place, I wish to state here that great art is not necessary to accomplish this end. But one thing is needed; viz., that we ourselves bow under the discipline of morality; that we be honest and brave, faithful and true in all things; that we ourselves do the right with energy. To live an example has at all times been more successful than to talk an example; a live example does more than the dead word. Then it is necessary that in our schools we diligently take a stand for a rigid discipline, that we lay stress upon obedience and good training; cleanliness, truthfulness, chastity, honesty, trustworthiness, reverence, and fidelity must receive more prominence in our work than knowledge and skill. Knowledge and skill alone have never made men better, for men act not so much according to their reason as according to their feelings. Therefore it must be our constant care to ennoble the feelings, to reform the tastes. Knowledge and depravity may very well be sisters.

Without rigid discipline the above-mentioned ends can never be reached. All great men have been reared under a severe discipline. The freer the institutions of a people are, the more rigid must be their discipline. We cannot expect our free government to survive when the sovereigns are slaves of their appetites and tastes. Childhood is the time when the appetites and tastes are to be refined. It will not do to allow the children to grow up in willfulness and deceit, and to restrain the adult by stringent laws. What has become habitual in men, be it evil or good, cannot be easily perverted; for this reason the training to good habits is essential. This rigid discipline of youth must not be insisted upon in the school and family alone; it must pervade also our public life. Boys are to be kept under control in the streets and public places, and to be filled with regard for law and order. It is a calamity for the State *when reverence of law and order are lost sight of.* I cannot, therefore, join those teachers who say, "What my pupils do outside of school does not concern me." If we consider the school as an organism, every transgression of the law by a member, or part of this organism, reflects upon the whole. The evil conduct of pupils in public helps to weaken the authority of the school. "What does not concern me, cannot burn me," is a bad maxim. The question whether the teacher ought to take any notice of the transgression of the laws by his pupils in public, seems to me like the question, "Is it lawful to heal on the Sabbath day?" Whenever we can promote the prosperity of the people we should do our share, whether it be done in school or out of it. This is what our public schools should attempt and carry out as their principal aim: strict education in morality, and rigid discipline.

But our schools are not only educational institutions, — they are also created for the intellectual training of youth; and in view of this we are justified in asking, "What is the most needful in this regard?" In pondering over this question carefully, I come to the conclusion that the answer is of a double nature: (1) Our children must learn to work cheerfully, and (2) our children must learn to enjoy work, feel pleasure in working. The instruction in school must be so imparted that our children learn to work. Yes, to work; for to be able to work is the demand of the times. The evils of society in our days are fostered and promoted by the desire of men to become rich without labor, merely by their wits; and many have lost their hard-earned pennies, and, what is worse, their energies, by speculation. But the penalty had to come,—for, that man shall work is a divine law which cannot be violated without punishment. We live, in fact, only when we work; for life is work, and work is life. Says the Psalmist: "The days of our years are threescore years and ten; and if by reason of strength they be fourscore years, yet is their strength labor and sorrow." And I am inclined to add, what would they have been had they not been labor and sorrow? They would have been nothing, — not worthy all the joys and all the sorrows. The happiness of man and of nations consists in labor, judicious labor, labor for the good of others and the whole. If these assertions are true,—and experience proves them to be true,—it is the duty of the school to educate its pupils to work; that it *tolerate no idleness and lounging*, and that it employ the children in a rational and appropriate manner, that in all the branches of instruction self-activity may be fostered in the fullest sense of the term: that it train not but one power of the soul, but that it appeal to all the powers; that it take hold of man and cultivate all his faculties; that it arouse the intellect, his thinking, feeling, and willing; and that by work it educate *to* work. The greatest evil in school is indolence. For this reason he is not the best teacher who knows most, but he who knows how to teach the children to apply themselves vigorously to their tasks.

It is a crime against human nature to send children to school merely that they may learn to sit still. During the instruction the teacher must arouse the interest of the pupils, ask short questions, and insist upon full, definite answers; not speak too much himself, but see that the pupils exercise their powers of speech. The more the teacher contains himself, the less prominent he makes himself in his instruction, the freer the child will develop, the better his faculties will be exercised. It is a sad spectacle to go into a school where the teacher does all the talking and the pupils are made inactive by mere listening. Another principle ought not to be forgotten: We must not make it too easy for the children to acquire knowledge; not by play, but by hard work, can they acquire truth. Only what man has worked for, becomes his own, his lasting property; teachers should, therefore, not present the subject-matter "cut and dried" on a tray, but cause the pupils "to seek and find" truth. In every case the children should be diligently questioned so as to develop their ideas; should be vigorously examined and tested; and then everything should be practised to perfection, because only what has been practised carefully is a basis of progress, is of any use in after-life. A little thoroughly learned is more than a great deal carelessly acquired. Jacotot never uttered a greater truth than when he said: "You are not a scholar when you have learned something, but you are a scholar when you remember what you have learned." And another one: "Three times you learn and three times you forget a thing, in order to remember it the fourth time." No hurry, then; no locomotive rapidity, but quiet, circumspect and thorough work. Yes, let us take care that the children may learn to labor vigorously. and that they may be trained to labor by labor. No man can have success in life if he has not learned to work, and even genius without work is no blessing to mankind. Industry and perseverance are indispensable qualities of the citizen. But we require also that work be done in a rational way. Man must, therefore, be led to think. A man that labors without thinking is on a level with the ox in the treadmill. Thinking alone cannot elevate man to his destiny on earth. This seems so self-evident that further argument is unnecessary; and yet, it is to-day more needful than ever to repeat this maxim, "Test the minds!" I will not speak of the many superstitions prevalent among our people, causing loss of life and property; how many who are classed among the *better*, resort to patent medicines and nostrums, seek a cure with quacks and wise women, instead of consulting a reputable physician; but I wish to point out evils arising from sensations and commotions created by social, political, and religious itinerant agitators who delude the people. All this is possible only when men cannot think clearly, when they cannot judge, when they are not practised in understanding arguments, when they do not realize the effects and consequences of their actions beforehand. I am well aware that the school cannot satisfy all these demands, that it cannot do everything; but I know, too, that much may be done in this direction by a rigid instruction that dispels superstition and credulity, by giving a knowledge of facts in such a manner that, at the same time, it becomes judgment.

When we consider how reading is still taught in a great many schools, how children are permitted to stumble over the piece, or how, in many instances, they imitate, parrot-like, the elocution of the teachers without comprehending the sense, need we wonder that, notwithstanding the press and an abundance of cheap, good books, so few people get any good out of their reading? And, then, how unmusically is poetry recited by the children? Can the child, by such such exercises, be raised intellectually? Is it led to think properly? Is such lip-work reading, *i. e.*, taking in the sense of the author?

Is is not expressly said in the Scriptures, "Understandest thou what thou readest"? and is not the definite answer given: "How can I, except some man should guide me?" It is similar with regard to reading-lessons in schools, which are not discussed nor explained, no questions asked except, mechanically, those in the foot-notes, if teachers would but ask, Who? What? Where? When? Why? How? etc., by such practice a good deal might be gained. Then the practice ought not to be forgotten that the pupils write down in simple form the result of their discussions and conversations; for when they know that they will be asked to do this, they will be more interested and attentive in the reading of the lesson. We must remember that in composition-writing success is obtainable only when the pupils have (1) practice, (2) practice, and (3) practice. To write a composition once in two or three weeks is not sufficient: *daily* exercises alone can secure tangible results.

In turning now to the second standard study, I would ask that the teachers spend not so much time in requiring their pupils to do long, difficult problems, which often take an hour or more for their solution, but rather take pride in causing the pupils to solve clearly and exactly a hundred easy problems in an hour. It may be that dependence upon the text-book is in the way of teaching arithmetic properly, the teacher striving for results rather than solutions; it may be that the slate-work has to a great extent superseded the oral work of former days; it may be that vigorous thought is repugnant to the easy-going playful habits of the times: the instruction in arithmetic is not what it ought to be, and this state of affairs demands a thorough investigation. One thing especially I wish to emphasize: development and demonstration, and a familiarity with numbers up to 100 at least, are the basis of success in arithmetic.

I might here speak of a great many things, of the instruction in the Natural Sciences, which are principally calculated to foster vigorous consecutive thinking and to dispel superstition, — but what I have said is sufficient. One caution, however, seems not out of place, — that to know a few things well is decidedly preferable to skimming over a great many things hurriedly; *non multa, sed multum* has even to day not lost its force. At dinner-table the wise man selects from the sumptuous bill of fare such viands as are digestible and wholesome; the dainties and tid-bits spoil the stomach: in the same manner the teacher must choose from the catalogue of branches such as can be easily assimilated and make the child grow intellectually. If you practise upon a few worthy things thoroughly, and by them discipline the minds of your pupils, you have done your duty; your pupils have learned how to learn.

As a true friend of the public school, I ask you to receive my opinions and monitions in the same kind spirit in which they are offered. We must fight against those arch-enemies of human happiness, against ignorance and stupidity that cost our people large sums annually; we are to promote clear thinking and a keen perception of existing facts and conditions; we are to be the custodians of the erudition of the mind and the ennobling of the race, of the education for rational work by work. And another request: Our children shall not only learn to work in thinking and to think in working, but the instruction must be so imparted that they feel pleasure in learning and that they work joyfully. Not the intellect alone, but also the heart, requires its share of culture. How may this be accomplished? The world to-day is full of men of embittered and pessimistic views. You see so many long-drawn faces that it becomes a matter of importance to ask, How may our youth be preserved in its happiness and gay spirits which enable them to conquer the vicissitudes of life and to come out of the battle victorious? By further investigation and observation we detect that nothing but rational work is the mainspring of happiness and blessing; but do not let us forget that *successful* work really gladdens and cheers man's existence. Wherever there is no success in work, there is no satisfaction; and the words of God to Adam after the fall, are especially characteristic: "In the sweat of thy face shalt thou eat bread, and thorns also and thistles shall the ground bring forth to thee." Not that man shall eat bread in the sweat of his face, is the penalty, but that the ground shall bring forth thorns and thistles, that he shall have no outcome from his work.

Wherever such work without prosperous results is man's lot, he cannot labor to his satisfaction; he cannot enjoy peace and happiness; let us, therefore, take pains that our children may feel the satisfaction which accompanies successful work. One of the advantages claimed for kindergarten work, and one which even the opponents of Frœbel's system have to acknowledge is, that quite young children feel the satisfaction of successful labor, because every one of the kindergarten occupations admits of tangible results from the work expended on it. Do not let us give the pupils anything for which they have no use in after-life. Let us select the typical and most essential from all the branches, and by these exercise their skill and discipline the children's minds. Too many things spoil the stomach. Let us only give them matter calculated to educate the mind, — good, plain fare,—no confectionery. When a careful selection has been made, let us present the food according to dietetic rules. Do not raise your standard too high, do not impose tasks that overtax the pupil's powers, do not burden nor discourage them by exacting demands which they, even with good will and strength, are unable to fulfill; rather short and easy lessons which may be well and surely learned, than long and difficult tasks which torture them and allow them to work without success. Rather give them few poems well chosen, and let them be so well learned that they become the inalienable property of the children, and thus may be a source of joy to them, when they have become old men and women.

"*Repetitio est mater studiorum.*" Do not neglect repetition and the necessary drill. A teacher who neglects them can never obtain the highest results. The field of his school will bring forth thorns and thistles to him; and it is no wonder, if the children lose all happiness and work but unwillingly. Children that are not bright and smart deserve the teacher's most loving care. When there are such weak and dull children in your school, have special patience with, and care for, them; the bright and talented ones learn without special effort on your part. Do not extinguish the love of work in these weak ones, but fan it into a flame. Many teachers scold and abuse the weak ones, calling them hard names and telling them they are good for nothing and will never make their mark in the world. Continued reproaches of this kind are too apt to stifle all effort on the part of the children, and finally they lose all self-confidence and give up in despair; they do not expect ever to amount to anything. If they are not dull, yet they lose all courage for further exertion. They finally believe what the teacher tells them and become sullen and morose. The great benefactors of the world were not the so-called bright school-boys, and many examples could be given of good and great men who, had it been left to their teacher's prognosis, would never have risen from the slough of mediocrity. Do not despise the stolid, slow children, and do not believe that the bright ones will be of most use to the world. If one could get statistics from the higher institutions of learning on this point, we might obtain some interesting disclosures; we should find that the pupils who were considered the smartest and brightest in school have by no means become the most useful men. For this reason, train every faculty even the weak one; give each an opportunity to develop and to enjoy the blessing of progress in little bits. Successful work alone can make man happy and blessed.

And another demand! children can be happy only when they feel that their teacher loves them. Children have a very fine sense for detecting the love of their teacher. They ask for love; for they were made to be loved. But it is not necessary for a teacher to tell them continually of his love for them; when the teacher's love is genuine, the pupils know it without words. In a school where love dwells, the teacher may be strict—*O so strict!*—and the children love him nevertheless. But in order to be successful, love must be coupled with justice; love must be consistent. This becomes evident especially in the matter of punishment. He only ought to be privileged to administer punishment who punishes lovingly, who punishes to reform. The rod is most effective in the hands of the teacher who loves his pupils best. Love and true happiness can be found in school only, when the teacher loves his profession, when he is filled with holy enthusiasm for his cause. The worst drawbacks for the success of a teacher has ever been discontentedness, moroseness, and a soured temper. I can not help acknowledging that the teacher's calling in many respects is a difficult one, and that neither money, nor honor, nor respect, are lavished upon him; but I cannot believe that the teacher's condition, in school or out of school, is improved by bitterness; that he may have better success, or rise in the estimation of his fellow-men, by complaints. When a teacher's heart is filled with joy, when he works cheerfully and lovingly, the children cannot help catching this love and cheerfulness; then they will like to work also, the parents take an interest in the school, and the moral conquests which raise the profession in public esteem will not be wanting. On this point I might add a great many things, but I must stop for fear of transgressing the limits of this article. Yet before I close, I wish to recapitulate my demands in short, tangible form.

The first requisite of the public school is rigorous discipline, and strict moral education in truthfulness, righteousness, honesty, and conscientiousness, in duty, decency, and reverence. Wherever these virtues are neglected, the intellectual acquirements will resemble the rays of decaying wood, which emit light but never warm. In the second place, our youth need rigid intellectual training, an instruction which comprehends all the faculties, which teaches to work and to love work. I emphasize especially severe logical thinking and a correct expression of thought in speaking and writing. The pupils must be enabled not only to comprehend, but also to represent ideas properly. To this training of the intellect must be added a culture of the heart. Children must be guided in such a way that labor is joy to them, and that they are happy in rational, successful work. The teacher must be the example by which the holy warmth is kindled, which renders what is difficult easy, and the burdens light.

These are some general principles which, I hope, you may indorse. I believe I have not uttered a sentiment that you have not felt and acted upon in your schools; yet I thought that, by repeating them, I might encourage you in your labors and point out the manifold blessings that you may bestow on the rising generation. If you educate your pupils according to these principles, the public school will fulfill its mission; the education of the people will lead to national prosperity, to national happiness; the outcome will be good citizens and, what is more, good men and women.

Shortly after the invention of the art of printing there sprang up in Flanders a family of printers, who soon brought the art to such perfection that, even to-day, their prints are unsurpassed. Their trademark was a pair of dividers, one foot of which was fixed and the other moving around on the globe; the motto was, "*Labore et constantiâ,*" by labor and perseverance. A later member of the firm added, "*Pietate et prudentia;*" by piety and prudence. Let us labor, then, and persevere; let us teach our pupils to labor and persevere, and prudence and piety will be the result.

EXAMINATION OF TEACHERS.

BY ELI T. TAPPAN.

A child is educated by everything with which it comes in contact. Every circumstance of early life, the home, the neighborhood, the games and the tasks, all have their influence. But greater than any of these is the influence of human beings, the children who are playmates, the men and women, the brothers and sisters, the father and the mother. The mother affects the education of a child more than all the combined material circumstances of life. A human soul cannot be truly educated by any instrument less noble than itself. Only by a diamond can a diamond be polished.

The work of a school is helped very much by proper material surroundings, grounds for physical exercise, houses well arranged and furnished. Pictures on the walls cultivate the taste. Music helps to soften the manners. Maps and apparatus and text books facilitate the acquisition of knowledge. It may be, as the Alexandrian schoolmaster said, there is no royal road to science, yet these material aids serve to make a good turnpike of the public highway. But all of these combined are as nothing to the value of a teacher. With no books, no apparatus, and no furniture, Pestalozzi could do good work. His very necessities led to the invention of new motives, which made education a science. A skillful teacher does good work with no material aids; an unskillful teacher does poor work with the best. No other instrument of education is so important as the master.

Much deserved attention has been given to courses of study, and there has been great discussion as to what mental food is better calculated to strengthen this or that mental faculty. Here, also, the overpowering influence of the master is apparent,—for whether the subject be botany, or an ancient classic, or pure geometry, he may cultivate elegance of expression with vigor of thought, and lead the pupil by either path to love science and to strive for scholarship.

Once all education was in the hands of the church. Experience has shown that ecclesiastical organizations are not necessarily inspired with ability to conduct schools. Many of the best schools are under their control and are wisely managed, but this is not due to any peculiar virtue in the organization. Learned men, inspired with love and skilled in the art of teaching, make the school.

At the present day the state is everywhere assuming control of the business of education. This will meet with assent as long as good schools are made; that is, as long as the best teachers are employed. It will fail and be condemned whenever teachers are employed because they are of a certain party in politics, or of a certain denomination in religion, or whenever they are appointed on any other ground than the best education of the children.

All employees of the State must either be elected by the people, or appointed by other officers. Popular election is proper for those who are to represent in some way the sovereign power, either as legislators, or as principal executive officers. Appointment is the proper way for those who are to exercise some particular professional skill. Reason and experience teach us that the people cannot exercise a wise discrimination in the election of such officers, particularly at the same time that the chief executive or legislators are chosen.

This principle applies to all school officers, whether they be superintendents, examiners, or teachers. Their work is skilled labor. The skill and knowledge required can be obtained only by education and training. The higher officers, the superintendents and the examiners, may be selected on the ground of established reputation. In practice, superintendents for county and State are usually elected, but superintendents for towns and cities are appointed by boards of education. I believe that experience is in favor of appointment,— those superintendents who have been appointed by boards of education or other responsible officers have done better work than those who have been elected by the people. Of course, the rule has exceptions. Teachers are universally appointed by a board or committee, and there is at least a pretence of examination. As the necessity of such examination is conceded, I shall proceed to speak of,— 1. Who should be examiners of teachers; 2. The object; and, 3. The method of such examinations.[1]

The examiner ought to be separate from the committee or board that appoints the teacher; for it is not to be expected that a board of education will be composed of experienced teachers, and certainly none others are qualified to examine candidates for admission to their profession. Nothing that teachers have to do requires so much skill as conducting an examination. The ordinary, well educated man, without experience in such work, is rarely able to make a fair measure of a candidate's knowledge of arithmetic; much less is he able to determine the candidate's skill in teaching the elementary branches. Even if members of the school committee were usually competent to examine teachers, the power should be in other hands. The party that employs the teacher, that makes the bargain as to salary, if he is also the examiner, is very apt to make the bargain first and the examination afterward. If the bargain suits the employer, the examination is apt to suit the examiner. Within my own observation, this has been the process, and I doubt not many have observed the same thing, it is so natural. The examiner should not only be separate from, but independent of, the board that employs the teacher. Any contract for the employment of a teacher who has not already been examined and passed, ought to be simply void. It is so ordered in some States, but this wise law may be easily evaded when the examiner is himself the employer or the employer's committee.

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[1] For the facts as to the laws of the several States for the examination and licensing of teachers, I am in debt to the circular recently published by the United States Commissioner of Education.

In all the States west or south of New York examiners are appointed for the county, and not for smaller divisions of territory; but in eight or nine States examiners may be appointed for a city or town or independent school district. In twenty-one States the county is the smallest district for examining purposes. In all the New England States the examiners are town officers, and (except in Vermont) they appear to be members of the town school committee. The geographical limit of this custom is marked. I wish we could have the results of observation made by competent persons, on this question of the size of a district for purposes of examination. My own experience is limited to the State of Ohio, where we have all kinds of districts. I have served as a city school-examiner in the largest city of the State, again as a State school-examiner, and again as a county school-examiner; also I have served as a member of a city board of education, and afterwards of a township board. My own conviction is that it would be an improvement if (except for large cities) the counties were united in groups for this purpose, usually three counties in one group. I believe that this has the approval of many of the best teachers who have given some attention to this question. The district should be large enough to make private and personal influence very improbable.

There should be at least two examiners,—better if there are three,—at every examination. In overseeing the work of a class of candidates, more than one pair of eyes are needed. In weighing results. more than one judgment is needed. In eleven States the examinations are conducted by single examiners. In one of these States the State Board of Education submitted copies of the same examination papers to a large number of county superintendents, who were the examiners, requesting each one to examine and mark the papers and return them to the State Board. This was done, and the various markings compared. It was found that examiners differed in their judgment of the same answer by fifty or sixty, or even eighty, per cent. of the maximum attainable. Much of this was doubtless due to the incompetency of some of the examiners, and perhaps also to obscurity in the statement of the question; but I have known experienced, careful examiners to differ by twenty-five per centum in their judgments. However, such difference would generally be less than ten per centum after consultation and comparison of views. My conclusion is that the plan which is followed in most States, requiring a plurality of examiners, is more like to produce just decisions.

One of the examining board should always be the superintendent under whom the teacher is expected to work. No other person is as much interested in having a fair and just examination as the superintendent. If the candidate has had charge of a school, no one is in as good a position to judge rightly of his ability as the skilled teacher who has inspected his labors. This principle has received the sanction of experience. In twenty-three States the superintendent of the schools of the county or town is, by law, an examiner of teachers. Also, in a great many larger towns and cities, the superintendent is one of the examiners. In many cases the good influence of this arrangement has neutralized or overcome the bad effects of district examiners for small districts. For these reasons, and in view of what appear to be the teachings of experience, I suggest that the best way to constitute a board of examiners is to have it consist of the superintendents of three contiguous districts.

Before proceeding to discuss the methods of examination it is well to consider the object. This is, primarily, to determine whether the applicant may have license to teach in a public school. " Primarily," for the examination may be used to ascertain the relative merits of teachers in order to classify them, and assign to such his proper rank. This use of the examination is recognized in about thirty States, perhaps more. In twelve States there are three grades; in nine States there are four grades; in some States five or six; and in one State there are seven different periods of time for which certificates may be valid. Usually certificates on licenses are valid for a limited time, and the rank of the teacher is shown by the time of the certificate; but in several States certificates of two or of three grades are valid for the same time. There seems to be no prevailing method or established principle to govern the classification of teachers.

The first distinction to be made is between those who are not yet recognized as teachers by profession and those who are so recognized. There are so few professional schools for the training of teachers that it is necessary, and will be for years, to allow many to begin the work of teaching who are only on trial. In four or five States certificates of the lowest grade are valid for a less time than one year, but generally the minimum is one year; and this is the better way, for these persons are supposed to be on trial, and six months is hardly long enough for the fair trial of a beginner. Some superintendents have advised that the teacher should never be granted a second certificate for a minimum period, and in one State at least this is the law. This may be, under some circumstances, good as a general rule when one of the board of examiners is the superintendent who has overseen the work of the candidate and can testify as to its success or failure. Where this has not been done, or where the failure is doubtful, it may be proper to continue the trial. Such trial certificates need not be all of the same grade; some may be for primary work and some for higher grades. Some beginners may have the literary and scientific attainments which are needed for an assistant in high-school work.

The conclusion I arrive at is, that those who show sufficient knowledge may be on trial, licensed to teach for one year, and the examiners should have the power at their discretion to renew this. It might be proper to renew for several years, if the teacher shows every year some decided progress. There must be more normal schools and better ones before we can limit the trial-period to a single year. Those who show to the examiners sufficient knowledge and sufficient skill to be admitted to the profession, ought to be admitted without any limit of time.

In a majority of States certificates are issued for various numbers of years; in two or three States even ten-year certificates are issued. There is no more reason in this than there would be in admitting a lawyer to practice at the bar for a period of ten years. I can see no more reason in a license for two years than in one for ten years. If the holder is on trial, one year is long enough, and if not on trial, there is no justification for placing a limit of time on the license. There may, however, be a limit of grade, depending on scholarship. In practice the length of time of a certificate depends almost always on the literary attainments of the teacher, and it is the result of an effort to classify teachers. But there is no justice in it.

I have known a woman, a gentlewoman, who possessed in a high degree the two essentials of a good teacher, common sense and a loving heart. Her scholarship did not reach high, but she was a good teacher. Teaching was her profession, and she deserved a life-certificate as much as any of her examiners, but she was compelled every year to fret her honest soul with vile problems on higher arithmetic and syntactical analysis. Her examiners were honest men, and they knew her worth. They made a compromise between their sense of right and the time-system of grading; they ignored the ignorance of syntax, and every year issued a certificate for one year. The system ought not to make such compromises necessary. Every teacher known to do good work ought to have a certificate for life.

On the other hand, no amount of scholarship or of science can of itself make one worthy to be admitted to the profession. The college graduate, with the highest honors of the class, may be unprepared and unfit to teach others. Then the object of the examination of teachers may be definitely stated to be,—

1. To separate those who may not teach from those who may;

2. To divide those who may teach on trial from those who are finally admitted to the profession;

3. To ascertain in what subjects each teacher is competent to give instruction, and to grade accordingly both trial and life-certificates.

Of course, when teachers already having life-certificates wish to be authorized to teach a higher grade of school, they can be examined as to the new subjects.

The manner and the matter of the examination are indicated somewhat in the discussion of its objects. The subject-matter must, of course, include all of the course of study to the end of the grade in which the applicant wishes to be ranked. It must include more than this. To teach properly the mathematics of any grade, the teacher should know at least as much as is taught in the grade above. To teach anything well, the teacher should know more than is given in the text-book, for we do not know anything well unless we know what is around and beyond.

In addition to what is in the school course, the examination should include a knowledge of the science of education. Even those who have never taught and are candidates for only a trial-certificate, should have studied the science of education; they should have studied what is written by experienced teachers. It may be said that if this were insisted upon, in many parts of the country the schools would be closed for want of teachers. With sorrow I am compelled to believe this is so. Nevertheless, the rule is right. Its justice is so manifest that I do not see how to make it clearer by argument. We might as well admit lawyers to practice who have never opened a law-book, or physicians who have never studied medicine, as teachers who have never studied the science of education. If we cannot apply the rule now, we can at least recognize its propriety, and we can try to make it possible. In the meanwhile, examiners may, with due caution, extend the trial period in certain cases.

Candidates for final admission to the profession should be examined on all the previous matter, and their knowledge should be more thorough than is required for those who are admitted on trial. Such a candidate should be able to explain and defend his own methods of government and instruction. In addition to the direct examination, the examiners should have before them a detailed report on each case by the superintendent who has inspected the candidate's school-work. They may learn something from the school records which the candidate has made. Also the evidence of the school committee, and of others, might be admitted, leaving to the examiners to determine its weight, as is done by other courts. This is the rule of evidence in courts of justice. A board of examiners exercises a judicial function. They are judges, and they may with propriety receive and fairly weigh all evidence that bears upon the fact which they are to determine.

In what remains to be said about the methods of examination, the judicial character of the work must be borne in mind.

The evidence given by the superintendent is of greater value than that given by others, because the superintendent is an expert; he knows better than the average member of a board of education what is good work done by a teacher. I have assumed all the while that efficient supervision is a part of the school system. There is no room in this paper for the argument of that question, farther than this,—there ought to be superintendents, even if there were no other use for them than to constitute boards of examiners.

Statements given by persons who are not teachers are of very little value. This is true of statements from teachers, if there is no opportunity to question the witness. Such evidence ought not to be admitted at all on a matter which the examiners can find out by examining the candidate. In West Virginia, the rule is announced that "no diploma or recommendation from a college president or faculty supercedes the necessity of an examination." This is in accordance with the established rules of courts in the admission of evidence. No candidate having the required knowledge has any cause to fear a fair examination. Diplomas from normal schools ought to be received on the same ground, allowing them their due weight, but not to supercede the necessity of examination.

When, in the board of examiners, the superintendent tells what he knows about the candidate, he is for the time a witness rather than a judge, and he should state the facts, that his fellow-examiners may exercise their own judgment.

No person of bad or of doubtful moral character should have charge of children in school. The evidence of character required by examers is frequently very flimsy,—merely certificates from persons themselves unknown. It was the custom of the first State Board of Examiners of Ohio to make an independent investigation, and obtain evidence entirely separate from the statements presented by the candidate before a certificate was issued. A life-certificate ought never to be allowed on merely one-sided testimonials.

There are several details of methods which I had purposed to discuss, such as a State board of examiners to supervise all the work of examination of teachers throughout the State; the relative value of oral and written examinations; the publicity of examinations; how far candidates may be trusted; the use of marks received at previous examinations, etc.; but already this paper is long enough. Suffice it to say, that the examination should be thorough, and it should be fair. There should be time enough, particularly for life-certificates, and when examiners are in doubt, they should not reject, but continue the examination till their judgments are satisfied.

A word about questions. I cannot too strongly condemn the foolish questions that are sometimes put. Our journals frequently amuse their readers with examples of silly answers, answers that are very ridiculous and deserve to be laughed at. But what shall be said of foolish questions? A foolish answer merely shows that one candidate is not fit to pass, but a foolish question is an injustice to a whole class of candidates. I have seen an "arithmetic paper" at a teacher's examination, in which one problem required the demonstration of a new proposition in geometry; and when it was done, the only arithmetical part of the solution was to divide 30 by 2. No candidate's blunder could be more ridiculous than the vanity of the examiner who invented such questions. Such puzzles do positive harm. They bewilder the candidate. Besides these harmful questious, there are many that are simply useless. Such are questions involving some controverted point. The answer, given either way, affords no fair means of judging of the candidate's knowledge. Such, also, are questions about some obscure item of knowledge, an exception to a rule in grammar, or the location of some insignificant town. Knowledge or ignorance of such a matter is no test. Every question should test, but not strain, the candidate's skill or knowledge.

In conclusion, where there are good teachers, there are good schools; there may be good teachers without a system of selection, but such good fortune is exceptional; in those places where there is no efficient system of examination (which is necessarily connected with supervision) there the schools make least progress. No possible system, no amount of expenditure could produce in one year, or in two years, good public schools all over the United States, because there are not enough good teachers, and they cannot be trained in one year or in two. The number of good teachers and good superintendents is increasing. It will increase more rapidly if there is a constant demand for such persons. That is the best system of schools which makes a steady demand for good teachers,—and that means universal, fair, and thorough examination.

EMERSON AS A SPIRITUAL LEADER.

BY ELIZABETH PORTER GOULD.

The cry from the cross, "It is finished," ended for Emerson the revelation of the highest in form through which he could know of the highest in spirit. This completed Christ-work became to him but another mighty force, added to the world's preceding movements, to open the way for the larger and more subtle reign of the Holy Spirit. For him Jesus Christ was buried forevermore to live only on history's page; while for St. Paul, He had risen out of his grave, ascended into heaven, and was the Lord whom he loved and preached.

Emerson's conception of Christianity in its relations to him personally caused him to become the loyal subject of the Spirit's dispensation. Hence his great work, with the light he could receive, must be to seek for and worship the spirit subtly hidden in all forms; and, also, by life and by teachings, to be a revealer of the hidden spiritual meanings. This conception of faith and duty, or loyalty to the Spirit, was as natural to him as the conception of loyalty to a living, personal, risen Christ was to St. Paul. Therefore, while the thought of the one, in its largeness, was tinged, and even imbued, with Christian philosophy, the thought of the other was Christian philosophy itself.

These two different realizations of Christianity guaged the power of the spiritual leadership of these two men. Emerson had a Mars' Hill, but not a Macedonia. He had St. Paul's calm ecstasy, but not his burning zeal. He had his longing for personal immortality, but not his unbounded assurance of its reality. He could say, "I have fought the fight," but he could not see so clearly the crown laid up for him.

While Paul's intense soul-realism, as centered in the living Christ, brought forth the "Epistles to the Romans," — the most profound book in existence, as Coleridge said,—Emerson's intense spiritism, as centered in the immanent Spirit, brought forth his suggestive work called *Nature*. While St. Paul's book is for all phases of the human heart and so for all men, Emerson's book, like much more that he wrote, is limited by the condition that it fall into fertile soil. This limitation is both its strength and its weakness. The greatest spiritual leaders have prepared the soil as well as planted; they have converted as well as inspired. Emerson, then, as a spiritual leader, had his limitations in that he could not touch all humanity. In his thought as a whole, even if not in his limited experiences, he may have touched all its phases; but he lacked the quickening power to inspire all its units. To souls turned heavenward he could give his magnificent vision of the Over-Soul; but what could he give to those turned hell-ward? Such souls, so lost to the light that they cannot see or feel the Holy Spirit, must have, as a help, some perfect, real personality standing along the ages of man's sinfulness, who shall declare in living words, "I am the bread of life": "I am the way, the truth, and the life"; "Come unto me" and find rest and deliverance from sin, for "Lo! I am with you always."

In Emerson's eager desire to find God or Spirit everywhere, he made all the revelations to man to differ in degree only, not in kind; hence for him the law of gravitation revealed God in the same way as the Christ did, but not in the same degree. This was the negative tendency which limited somewhat his vision of a personal God; and explains, in a measure, why, in his ardent devotion to the work of spiritualizing matter, he could not have seen in the Transfiguration anything more than a "tale that is told"; or that, in his sincere belief in the power of mind over matter, he could not have gloried in the Resurrection as a reality. His intense belief in the efficacy of Spirit in the natural, shadowed him from seeing its peculiar workings in the realm of the super-natural. His very obedience to his conception of the Spirit-dispensation, under which he lived and labored, was so soul-filling that it became his limitation; but even with this limitation he so surrendered himself to the workings of the spirit that he gained a rich spiritual vision, of which he knew the transcendent value. He felt the responsibilities, and accepted willingly the world's limitations which it brought to him. He knew that, in so far as his mind and soul were one, he would possess that concentration of vital power which would enable him to *see* truth as well as to grasp it. In thus being a seer of truth as well as a possessor, he saw that the inconsistencies of thought arose from a want of this perfect union of mind and soul; for he felt that only the single-eye reveals the perfect knowledge. Since he saw that only perfect harmony of life,—the outcome of obedient service to the laws of Spirit, God,—could insure the continued presence of this spiritual vision, he knew the value of *being* over knowing; that that guaged for a man the length, breadth, and height of his spiritual insight. As his conception of being involved the growth of all his faculties, he was eager to bring them all to the light. This necessitated his casting aside what seemed to him shams or pretensions, as well as sectarian spectacles. In that his soul must know no avoidable limits, his communion with the Infinite must not be limitad to any particular time, phase, or form. A failure to find such communion everywhere, argued for him a failure to attain the highest being. So, hearkening to the calls of the Spirit within him, and in nature around him, he was willing to follow where it led.

As for himself he needed no other authority or guide. This faithful loyalty to innate man, — the embodiment of mind in the individual, — gave to him glimpses of the universal mind which penetrated nature. In those moments of ecstasy he seemed blinded to the depraved tendencies subtly lurking in man, which, not subject to heaven's will, preclude eternal loss. Every man in those moments was to him a god, who could live in his own strength. In his splendid optimism,—and for this optimism the nineteenth century should be grateful, — he taught obedience to righteous laws as the great remedial force for humanity; but, in his philosophy, he failed to supply a motive sufficient to inspire that obedience in those sunk in the depths of sin and misery. His teachings are not imbued with the idea that that authoritative and helpful guidance, coming from a special life, having been put into humanity to reveal the true nature of the human heart and its need of personal relations to a personal Redeemer, is, for such, the only salvation. This St. Paul knew and preached, and hence the secret of his transcendent power as a spiritual leader. It was the core of his philosophy, and the inspiration of his apostolic life. That St. Paul, in the earthly atmosphere of the time in which he lived, could have seen so clearly that the supreme love which that life revealed was a personal God, manifested to the extent of man's capacity to see Him, proves his greatness for all time. That Emerson failed to see the peculiarly essential difference between the work done by such noble workers as Socrates, Confucius, and others, and that done by Jesus Christ, proves that the dust of the centuries' theological controversies was in the way of his perfect sight. His eye, which could span the ages, saw not the "Lamb slain from the foundation of the world." He localized the Crucifixion; he limited divine power; he had no isle of Patmos. But in his sincere loyalty to the spirit, as he saw it, he stands as a leader and inspirer for all who can reach him; ever, however, to appeal more to the scientific mind than to the sinful, sorrowing heart.

In a peculiar sense, in his simple, pure life, he unconsciously fulfilled the prophecies of the Christ-age concerning the age to come. But in that he could not see the special, continued relation of the Christ-dispensation of one age with the Spirit-reign of the next age, *in its longest bearings upon a sinful human race*, his vision was shadowed by local clouds, and his power narrowed to the comparatively few. Therefore, he will go down the ages as a wise thinker of serene spirit rather than as a spiritual leader of great comfort and power.

THE MORAL INFLUENCE OF MANUAL TRAINING.

BY DR. J. R. BUCHANAN.

It is over forty years since, by demonstrating the functions of the brain as the organ of the soul and commander of the body, the seat of all conscious life, that I organized what did not before exist anywhere, a complete science of Anthropology, out of what necessarily arises a philosophy of hygiene of medicine and of education, and which, after being taught many years in medical colleges, is the basis of the new American University at Boston, in which I am engaged. Had I time to give an exposition of the constitution of man, I might show from the brain and the soul the inseparable connection of the industrial and moral elements, using the word *moral* in its largest and most religious sense. But time permits only that I should treat the subject from an external and practical view.

Education has a very simple and almost self-evident science or philosophy,—more or less known to all, but very imperfectly applied. Healthful and pleasant exercise develops every faculty, every element of soul and body; and when all human powers are thus normally developed, education is complete. But that development must be symmetrical. He who attempts to row a boat with the right or left oar will not only make slow progress, but reach a different landing from the one aimed at. He who would live upon a single article of diet will soon find his constitution undermined, and perhaps beyond recovery. He who, in education, would cultivate but a single group of faculties, will produce so partial and abnormal a development as will mar for life the completeness of manhood and womanhood.

Are there any one-sided methods of education which impair the physical stamina to an extent that shortens life in many cases, and impairs its efficiency in all? Are there any methods of education which take men out of the currents of active life, disqualify them for business, and fit them only for solitary occupation with the pen? Are there any methods of education which stimulate selfish ambition or rivalry, but leave the high moral nature as feeble or as barren as it may have become by accident or evil association? The voice of many thousands affirms that such evils do exist, and we see their obvious cause in the theory of all prior centuries (which is still the dominant theory of the universities), that mere intellectual culture is a liberal education.

In the light of a true Anthropology, we see that intellect is the feeblest element of the human constitution. It is not the upbuilding or the controlling element. Instead of generating force, it expends it; and it would rapidly exhaust and destroy life if its operation were not checked by sleep. We cannot sustain its action more than two-thirds of the twenty-four hours. Hence a rigidly intellectual education not only interferes with the entire moral and physical development which it partially suspends, thus choking the very fountain of life, but actually expends vitality so rapidly as to make it even dangerous to delicate constitutions. What appalling statistics might be gathered on this subject by a proper medical commission we may infer from the injury of the eyes in German education, which begins in the primary school and attains progressively its full development in the universities, in which, according to Virchow and others, the great majority of the students become myopic.

All partial culture is fatiguing and ruinous. The law of health demands an equal distribution of the blood, the vital forces and activities. Nature supplies this to every human being who is not deprived of his birthright by an unnatural education, or the prolonged taskwork of the manufactory. The boy naturally rebels against this constraint and learns to dislike his tasks, which he could not endure but for the refreshing relief of the playground, in which his animal and social natures are restored. But true education, or development is delightful. It is that which every child, however young, longs for and seeks. He seeks it in society, in observation, and in trying to do whatever others are doing; and if we give true education, it will be difficult to keep him away from the place where it is given. But no partial, one-sided system is a true education. It must give free play to all the activities of life in a healthful and pleasant manner. In doing this, every faculty agreeably engaged adds to the sum-total of energy and invigorates the rest. This is the natural method which is always successful, while the unnatural method of exercising a single group of faculties alone deprives them of the energy and support they receive from the rest. Each faculty makes its demand on the heart and lungs, and when all are engaged, the strength of the circulation and respiration exalts the vital power of each to a condition of increased energy, increased growth, and the development which is the object of all education.

The attempt to develop by partial education must always be a failure, for partial education is but a partial development of the vital forces of soul and body, and tends to their impoverishment. But when all are in operation, firmness, enthusiasm, zeal, and ambition are roused, every faculty participating in their higher life works in the conditions of ease, success, and growth. Our lives are naturally lives of activity, and the child is born with a passion for activity of body and soul,—activity of the muscles and activity of the social emotions, with equal activity of the intellect. In the old-fashioned school his muscular activity is suppressed, and his emotional nature is also suppressed by the command of silence and the stern authority which suppresses the loving emotions that are indulged at home. Every hour spent in that situation is an injury to his physical and moral constitution. A child should live in the atmosphere of love, and his moral nature dwindles whenever he is taken out of it; and he should live in the freedom of bodily motion which his constitution craves. It is not mere restless motion that he desires, but the doing of something which gratifies his intellect, his curiosity, and his ambition of achievement. I do not, therefore, see how we can leave out skillful, industrial occupation from the education of any youth (whatever his future is to be) without doing him an injury by depriving him of normal development; and I hold there is no true liberal education which omits the invigorating industrial element.

So false have been the educational theories of the past that when we suggest industrial occupation, the feeling at once arises that it must be an interference with intellectual culture, and that the school and college can hardly afford any space for the new element, as they are already crowded by intellectual studies. But instead of presenting industry as the rival or competitor of literary intellect, I present it as the natural assistant and invigorator of intellectual education, maintaining that it is impossible to give as thorough and efficient intellectual culture without, as with it. Industrial occupation whets the appetite for knowledge. We can hardly appreciate (says E. L. Bruce) the passion for learning which sometimes fills the heart of a poor child.

The intellectual culture of active art is *far more vigorous than that of literature*, and makes *a far better preparation* for business of any character. In literary culture we feebly and indefinitely grasp ideas by their association with printed words. There is no life, no force in the object of our study. It taxes, but does not refresh the intellect. A sufficient amount of reading exhausts the character and reduces the man to a bookworm. In industrial art we are continually stimulated by the presence of the object, and the operations we are performing, and our perceptions are clear, positive, and exact. It is such perceptions that invigorate the mind and give it self-reliance, while the hazy conceptions derived from books give it habits that are hazy.

indefinite, and indecisive. Moreover, in literary study, the mind is in a passive or negative condition; but in art, it is active and positive, The concentrated attention, the close observation, the ingenuity, invention, and judgment in use in art are far superior as mental discipline to anything that literature can give, and whatever is learned in this way is learned positively and permanently, while four-fifths of the literary acquisitions of schools fade out into dimness, or are lost.

The boy who has just constructed a wagon is in a much better mental condition than the one who has just learned his lesson in grammar. Art work is natural, pleasant and invigorating, while literary study in the young is generally task-work, which is not invigorating, but fatiguing. All labors which are not spontaneous or attractive, but fatiguing, have a degenerative influence; and life is shortened by all extreme, fatiguing demands for physical or mental labor. That alone is beneficial which can be performed with interest and pleasure, and Professor Hagar tells us that even girls take to the use of carpenter's tools with enthusiasm. Moreover, industry is the basis of the moral nature. The first duty of life is self-support,—that failing, life is a failure. Hence, every hour of industrial occupation is a cultivation of the manly, moral nature which assumes at once and performs faithfully the chief duty of life. As we cultivate the muscles, not by reading essays on gymnastics, but by gymnastic performance, so likewise the moral nature is cultivated effectively, not by moral essays, but by moral action, and moral action implies industrial action. Industrial occupation has proved the most powerful, the absolutely indispensable, means of reforming criminals. If it has so great a moralizing power, we have no right to exclude it from the standard system of education, for moral development is worth more than intellectual development; and if the choice were offered whether education should be all literary or all industrial, I should say industrial,—for that would give us both intellectual and moral vigor, which the present system does not. I claim that the industrial system is the *true liberal education*, and I accept the definition of liberal education given by Rev. H. Stebbins at the Exeter Academy Centennial, —"the discipline of the man, putting him in the widest relations with humanity as a general preparation for life in whatever sphere he may be called to act." That is precisely what industrial education does, while the old-fashioned education produces a half-developed man in sympathy with the literati of to-day and with the literature of the past; and we are all victims of the partial education more than we are willing to confess.

Would it be too much to say that an exclusively literary education does not contribute to the active progress of society, but rather tends to hold the present anchored to the past? We might quote in behalf of such an opinion the assertion of Lord Macaulay, that "the University of Oxford had the unquestioned preëminence, the glory of being farther behind the age than any other portion of the British people, —a preëminence which that learned body acquired early and never lost." We might also refer to the Empire of China, in which literary education is not only widely diffused, but is the basis of honor and of political power, as the best example of mental stagnation united with literary culture. In proof of these assertions as to the moral influence of industrial training, I would refer to the State Reformatory School of Ohio at Lancaster, in which, for twenty-five years, the combination of industrial and intellectual education has been carried on under Christian influences, and has educated more than two thousand criminal youths, more than nine-tenths of whom have been fully redeemed for lives of usefulness, while their intellectual and literary progress has not been retarded by giving half their time, not merely to industrial training, but to actual farm-work and shop-work. The school of these working-boys compares favorably in intellectual progress with the common schools of Ohio, while their moral deportment is superior to that prevailing in any common school of our country of which I have any knowledge.

It is not strange that the hard-working boy at Lancaster equals the unworked boy of the common schools, when we know that industrial occupation gives a mental discipline of a high order, while the wild, disorderly sports of uncontrolled boys produce a mental dissipation and restlessness which counteract the effect of the school. If the hard-worked boy keeps up with the idle one, we may infer that the boy who is not heavily taxed in that way, but has his industrial training merely as a part of his education, will greatly surpass the boy who is merely a literary scholar, unassisted by industrial art,—by which I mean not merely drawing, modeling, or designing, but working also to produce something of value. This has been proved, in a New England school, one of the most interesting and unique experiments in education of which I have ever heard, and this is the lesson which is urgently needed. Industrial art education has been running too much in the old groove of intellectual culture, drawing and designing, instead of *doing*. It is a grand step in progress, but we need the next step, which continues *action with thought*, developing practical power and ethical principles as it was done in a New Hampshire school.

Ezekiel Rich, born in 1784, was a poor bound boy in New Hampshire until twenty-one years of age, when he devoted himself to acquiring an education, became a successful minister at Troy, New Hampshire, and impelled by an ardent philanthropy and the memory of his own toils and sufferings, he established a school in a singularly original and practical manner to improve the common school system, and enable the poor to gain a good education by their own labor. I rely upon his own account of the school given forty-five years ago, in 1838, in a lecture before the American Institute of Instruction.

Mr. Rich's experience began in a simple and natural way from his objections to the demoralizing common schools, by teaching his own children at home and a few of the neighbor's. He began by allowing them to work during the recitation of spelling. That succeeding well, he introduced work into English and Latin recitations generally, and next introduced work into their studies, while he taught them orally. "Extending these experiments (says he), I was at length forced upon the broad conclusion that all branches of learning, except the manual part of a few, such as writing, drawing, painting, and instrumental music, can by competent teachers be communicated and received, to say the least, *as* pleasantly, *as* rapidly, and *as* thoroughly, at the same time with proper productive hand-labor, as by any other method. Any work is proper that does not require too much noise, motion, or intense thinking,—such as braiding, knitting, sewing, etc. Even the impossibility of obtaining such kinds of self-supporting business need not break up or greatly embarrass institutions of this sort, provided other productive business, especially that of agriculture, can be procured. For, at worst, our system will, as we have proved by experiment in the late hard times, admit on an average through the year of the pupil's learning, and that to the best advantage, eight or nine hours a day."

Mr. Rich had in his school, altogether, about twenty-four permanent inmates under his family government; about forty manual labor boarding scholars, paying all their expenses, including clothing, by their labor, and sometimes making a little over; and about fifty day scholars, coming in from the neighborhood,—his object being, as he said, to give a good and useful education and entire support to youth between five and sixteen years of age, without any expense to them but their own beneficial and necessary labor, to fit them for useful lives, and to increase the useful efficiency of women without impairing their delicacy and refinement. I quote from his lecture the statement of his methods and results, the essential features being *the combination of oral instruction aud manual labor* during eight or nine hours daily:

"1. The institution has well supported itself, paid six per cent. yearly on all the property used, and laid up, besides, rising of two hundred dollars a year.

"2. The health of our inmates, notwithstanding the hereditary and chronic diseases with which many of them came to me, is far above that of children in general, even in our very healthy region. It is the united testimony of all impartial observers, that our inmates, except when afflicted with innate and cutaneous maladies, appear peculiarly contented and happy.

"3. The part of the almost universal reformation of extremely vicious, uncivil, and perverse children of both sexes, within a few weeks or months after admission, is very encouraging.

"4 Our inmates are constantly forming good habits in the grand matters of care, neatness, frugality, order, and various important business, without which the greatest attainments in mere literature, science, and polite learning are of little value.

"5. As far as we can judge from the present state of experiment, this system adds greatly to the physical efficiency of males, and quite doubles that of the more wealthy and educated half of the New England females. [He mentions a female pupil of fifteen who walks thirty-five miles a day freely without injury.]

"6. Our pupils have, to say the least, made as great improvement in literature, the arts and sciences, as those of similar age who have been kept the same time, at great expense, in the best common schools, high schools, boarding schools, or academies.

"Oral instruction, instead of receiving detriment from its union most of the time with proper self-supporting handicraft, does, in fact, itself derive much advantage from it. Some people, prejudging the case, seem to think that our plan imposes a double task on children, and, of course, *double fatigue*. But the result of thorough trial proves enactly the reverse. I never knew any of our inmates to exhibit signs of distressing uneasiness by attention to both, at once, during eight, or even ten, hours a day."

He speaks of the painful weariness of children in common schools after five or six hours of study, and the discontent and fatigue of children kept seven or eight hours a day at work, and the great contrast in "a school of our sort, where proper and productive business is prosecuted, together with pleasing, exciting, and profitable conversation, or oral instruction, conducted by an agreeable and able associate or teacher," where, "during some eight, ten, or even twelve, hours a day, fretful irksomeness has no place. Observe the cheerfulness, the vivacity, nay, even the innocent, healthful mirth often here enjoyed. Nothing is difficult, tiresome, or disgusting. The labor of the hands, which soon becomes almost automatic, operates as a spring and balance-wheel to give constantly fresh vigor, self-possession, and stability to the mind; and delight of the mind arouses the animal powers, gives energy to the body, and pleasant sensations, causing the time to pass lightly and agreeably."

"Another advantage of uniting oral instruction with proper work is not only the diminution or prevention of fatigue from both, *but the great increase* of the rapidity of acquiring learning. Pupils will obtain knowledge and general mental improvement *much faster* with the union, most of the time, of hand and mental labor than withoht such union. This is proved by abundant trial in our infant institution, as fully attested by pupils of sufficient age and experience, by their parents and friends, and by many visitors and examiners. Add proper labor to oral instruction, and the rapidity of acquisition is surprisingly increased, and the fatigue diminished. When work is brisk, learning is brisk; and so of the opposite. The vast gain of time for learning by this union is no small affair. As I regard the health and general good of my dear inmate pupils, I would not allow them a single day to dispense with their hand-labor, even if it were of no pecuniary profit.

"Education, according to this system, is of of vastly superior worth after it is acquired. It appears from reason, and as far as we have yet had opportunity to judge from experiment, also from fact, that this system, faithfully followed from an *age as early as five years*, will add quite four years in both sexes to the early, stirling, and best part of self-directing, independent life, qualifying our youth for settling in life, and managing their own affairs four years earlier than usual. It will probably add as much as four years to the later part as well as first part of man's life. It annihilates much want and suffering, gives much superior health and comfort, and adds quite one-third to general human efficiency; fitting people in a special and peculiar manner for the various ordinary relations, duties, trials, and enjoyments of real common life, and, finally, for the society and felicities of the heavenly state.

"Another thing which peculiarly enhances the value of this education is its qualifying its subjects in an eminent degree to teach others what they themselves know. This we design all our pupils, who commence in season, to acquire by the age of sixteen, for they are daily learning what to teach and how to teach it.

"This system takes any child of good promise, especially the most needy and unfortunate, including those of either sex, who by bodily infirmity are unfit for business save what is sedentary and light, at about five years of age and carries them forward till sixteen or more wholly by the cultivation of their own powers in a course of general education for common or professional life. It is designed by that age to finish the school and business education of females, or to furnish them well for self-teaching, self-care, and self-support in any proper station or employment, embracing common housekeeping, cookery and dairying, millinery, dressmaking and tailoring; an ornamental education in the fine and polite arts, such as drawiug, painting, and music, *and a solid literary and scientific education besides*, quite equal to two-thirds of that on an average obtained by graduates from our colleges."

I have long believed in the entire practicability of educating the whole rising generation with very little expense beyond what is defrayed by labor of pupils up to the age of eighteen or twenty years; but Mr. Rich claims to have succeeded with the labor of pupils between the ages of five and sixteen, which certainly required great executive capacity and skill on his part, and the whole scheme, in its conception and execution, was so great an advance beyond his contemporaries as so entitle the name of Rev. Ezekiel Rich to rank with those of Pestalozzi and Fallenburg. Amid the cramped circumstances of a poor country parson, he achieved a success not surpassed in any educational record, and I would like to see a monument erected to his memory.

I have long been accustomed, from many years' experience, to estimate good oral instruction as being three times as efficient as textbook study, and I have regarded good training in manual arts as more than equal to literary instruction for intellectual progress, while it is the very backbone of moral education. Mr. Rich was the first to demonstrate the power of the two in combination to aid each other, producing more rapid intellectual progress, and destroying the fatiguing monotony which attends any single operation. I regret that he did not give us a detailed description of his methods. Children cannot sustain eight hours of mere study, or eight hours of mere work, without great fatigue; but eight hours of industrial occupation, enlivened by conversational instruction and brief intervals of recreation, will maintain unflagging interest and pleasure; and when frequent singing is added, the pleasure amounts to enthusiasm, for whenever men sing at their work they work with pleasure.

Mr. Rich is not the only original thinker in our country who has tested and proved the superiority of an integral education, which combines industry with literature. Dr. O. H. Wellington, a clergyman and physician of much originality of thought and earnest philanthropy, established the Jamestown Institute at Jamestown, New York, in 1859, in which industry and inventive originality were the chief characteristics, the pupils being made original thinkers instead of passive recipients. His methods were highly appreciated by Pierpont and Horace Mann, and all who were well acquainted with the school, and his experience induced him to say, "Almost all think that, to develop rapidly, six hours at least must be given to study; while the fact is, that more can be learned in three hours if *manual operations* are made attractive and all amusements be made a means of culture the rest of the day." "As certainly as the stomach suffers if more food is taken than can be assimilated, so the mind suffers if the memory is overfed with words embodying principles that cannot be understood or applied. True, memory must be cultivated as well as other faculties, but this is most effectually done when the pupil not only comprehends principles, but is interested in applying them to the ordinary work of common life."

In this integral education, so happily illustrated by Rich and Wellington, the acquisition of any useful art should be accompanied by oral instruction concerning that art; and whatever is acquired in connection with practical work is acquired naturally and successfully, because all these faculties of soul and body are symmetrically and pleasantly engaged, and the entire brain is roused, every faculty working with full power, as every soldier in an army is impelled by its aggregate zeal and courage.

As the man who attempts to run upon one leg has poor speed and quick exhaustion, so do all the single-stringed methods of education produce exhaustion, fatigue, and failure. But when the soul is uplifted and inspired by the love of the living teacher and the ravishing power of song, and when these exalted sentiments are consolidated in our bone and muscle by industrial action at the time, we develop a noble and enduring manhood for time and eternity. It is the only manhood on which a republican government can stand, and this morally industrial education is the only possible measure which can relieve us from the dangerous classes of criminals, from the threatening army of tramps, and from the convulsions, mobs, and anarchy which are coming upon us, when millions of unskilled and poorly educated workmen living near the precipice of famine are liable to be tumbled over its edge by any sudden tilting of the balance of trade, or the fluctuations of markets, even if the curse of monopoly and speculation were removed.

A population without any industrial training is a Pandemonium; and a population with no better industrial training than what has been developed by accident is like a volcanic region covered by a thin crust which the fluctuations of commerce are continually cracking. With the terrible Pittsburg riot still sounding in our ears, we should be prepared to present and enforce the educational remedy with such vigor that every Legislature would respond to our demand for schools of industry and virtue for all,—and for this good work I trust the Bureau of Education will diffuse the necessary enlightenment.

PLACE AND FUNCTION OF THE MODEL SCHOOL.

BY CHARLES DE GARMO.

In the discussion of this topic, an important question arises at the outset as to what is meant by a *model school.* In a restricted sense it means a department of a normal school, taught by experienced instructors, and designed to be a model for the imitation of prospective teachers. In a more general sense it may signify any department of a normal school whose p rpose is to asist the student to embody in practice his academic and theoretical knowledge.

It is with the place and function of the model school, considered in this wider sense, that the present paper has to do. The very existence of a normal school assumes, or should assume, that teaching is a duality, a science and an art; a business that can be properly done only when knowledge has been embodied in successful practice. One-third of the public school teachers of Illinois enter the school-room for the first time each year. Probably eighty-five or ninety per cent of them have no professional knowledge whatever, while their academic attainments, being acquired in the district and village schools, are not high. Even if they should all do the academic and theoretical work of the normal school, there would still be a wide gap between their attainments and their teaching. They, and consequently the schools they teach, would suffer from this lack of proper ideals of what a school should be; for labor with what zeal we may, it is impossible to suit either the matter or the manner of adult teaching to that which is best for elementary teaching. Never having had practice in actual instruction, these persons would be deficient in the power of teaching others so that the best result, both of mind-growth and acquisition, should result. Knowing only the few methods that they themselves have come in contact with, they are likely to become mere groove-runners, and finally, having but little idea of what is fairly attainable in public schools, they fix upon these schools irrational, time-wasting courses of study. It was with the design to save the public schools from the evils just mentioned that model, or training departments were established in connection with normal schools. For purposes of more careful examination, we may consider the function of these schools under four heads:

1. There may be what is exactly defined by the term *model school,* a school in all respects a model for imitation, taught by skilled teach-

ers, and fully equipped with all proper appliances. Such a school must hold an important place in any fairly complete normal school, for, since there are probably not more organizations among teachers than among mechanics, the most that may fairly be expected of the mass is that they be able successfully to imitate or adapt the methods which their leaders devise. Another advantage is that it is adapted to large numbers, for a few may do what many can see.

2. I mention next the *training school*, or the school in which the future teachers may practice under the supervision of a training teacher, so as to get a practical mastery of most of the difficulties of instruction and management. This department is indispensable to the successful preparation of teachers. Nothing can take its place, for, though we may form ideals by sight and instruction, we must learn to do by doing.

3. It is within the function of these schools to originate and test new ideas and methods, for surely normal schools cannot afford to rest under the imputation of their enemies that they are but mills, grinding out an unvarying, mechanical product, always to be known by empiricism and dogmatism. I therefore place as the third function what may be termed the *experiment school*, or the school in which new ideas and methods, originating at home or abroad, shall be put to practical test by experienced teachers.

4. It is of the utmost importance that candidates for teaching should be taught to know what is desirable and attainable in the various departments of common school work, and I apprehend that it is within the function of the class of schools of which we are speaking, to have a department which shall determine the allowable minimum of efficiency; *i. e.*, that shall show what should be accomplished by every teacher. We may, for want of a better name, call this the *determining school.*

It would be an ideal state of things if we could have all four of these departments fully organized in connection with every normal school. The first would present models for imitation, the second the indispensable opportunity for the candidate to do actual teaching, the third would secure a fair trial under favorable circumstances of all new methods, while the fourth would determine for our schools what those of the West, at least, stand sadly in need of, viz., what and how much ought to be done in them.

It will be seen that these lines of work are more or less independent of each other, but it is not probable that any school can be found in which all are pursued separately. The model and training school at Normal, Illinois, with which I have had the honor to be connected for some years, represents the growth of a quarter of a century. In it are exemplified in different degree all four of the departments I have mentioned, though all experimental and determining work is incidental to the model and training departments.

Before discussing in detail the work of model schools, we may properly note a few considerations as to the time at which it should be done. The place in the curriculum for the work of these auxiliary schools should, in general, be such as will, on the whole, best enable them to perform their functions. One consideration demands that it come late in the course, and another that it come early. Unless it comes late, much of the efficiency of the school must be lost, since most of the students are at first unprepared to receive the highest good that the model school can impart. Unless some of it, at least, comes early, it will fail entirely to reach a large percentage of the normal school, since perhaps not more than ten or twelve per cent. of the students of these institutions, in the West at least, ever complete the course, while large numbers leave at, or before, the end of the first year.

In some foreign countries, from two to five per cent. only of undergraduates are employed as teachers, so that the normal schools, being able to hold their students until graduation, can arrange their professional work according to an ideal plan; but in the United States, where anyone may teach who can pass an examination in the academic branches to be taught, the work of the model school should be so placed in the curriculum that it will reach, to some extent, the large number of students who leave early in the course.

In our school at Normal, the model work, in the restricted sense,—or as we call it, *observation*,—comes first in the professional course. This arrangement is made because, though untrained persons are defective in observation, they can see far better than they can teach, and with less danger of unfortunate results to themselves and the school. Its systematic presentation is confined to the primary grades. We present the work of the primary school to the observation-class, rather than that of the intermediate or grammar grades, chiefly for two reasons:

1. Because primary teaching is likely to be the least understood.

2. Because the need of skill in this grade is more widespread than that in any other department.

Most prospective teachers being able to recall little, or nothing, of their own early tuition, having seen but little primary teaching in their subsequent education, and knowing nothing of the nature of the child's mind, or the philosophy of teaching, can do little but grope in the dark at this most important time, when the child is helpless and the teacher the sole guide.

The need is more widespread, because the principles which apply to primary teaching obtain in greater or less degree well along into the grammar grade, so that there are few, if any, who do not need to know them; while to those young men who leave us to become principals and superintendents of schools, the instruction in matter and manner of primary teaching is invaluable.

Our observation class, often numbering 150, is composed each term of all who have just entered the normal school for the first time. Thus observation is one of the initial studies of the course. Now, unless something is done to help these untrained students to see the things important to be seen, and to preserve for future use that which is valuable, much of the time and effort put into this work would be lost. Each student is therefore required to note in his scratchbook the results of his observations. At stated periods each week the class is called together by the training teacher having charge, who then proceeds to question them upon what they have noted, to correct false notions, and to elaborate the plan and purpose of what they have seen. The students then record in permanent books the amended history of their observation, and, so far as they are able to do so, its philosophy. The work of a *determining* department is brought in here, being embodied in schemes of what and how much should be attempted in the different grades of the primary school. These schemes are written upon the board by the primary teacher, and permanently recorded by the observer. At different stages of the work,—as, for instance, upon the completion of the observation in reading,—the class are examined in writing upon what they have been over. These papers are corrected, graded, and returned. It may be remarked here that the diaries and recitations of the class are also graded. A considerable, though diminishing, per cent. of the students fail to obtain the required mark the first term, on account of the unusual difficulty of the subject. and review their observations at a subsequent term.

It may be well to state at this point that our training force consists of three persons,—a principal, and two assistants. Besides assisting materially in the training work proper, one of the assistants presides over the primary grade as principal, and the other over the intermediate and grammar grades.

The next work of our model school, using the term in the general sense, is that of the training department, where the pupils of the normal school do actual teaching. The desire to reach all of our students prompts us to put the work early in the course; but in addition to the reason already given for deferring it until late in the course, is the following very important one, which concerns the existence and efficiency of the model school itself. The pupils of the intermediate and grammar grades, of which I have had charge, pay a tuition of $15 and $25 a year, respectively. They are mostly drawn from the public schools of Normal and of Bloomington, which is two miles away. In order to secure patronage, there is demanded of us an efficiency in the pupil-teachers which forces a minimum of ignorant and a maximum of well-prepared pupil-teachers. It may be thought that the interests of the pupils in the model school are purely secondary, and not to be considered when determining when the pupil-teachers shall do their work; but we have found it necessary to consult the interests of model school pupils at every step. Therefore, pupil-teaching does not begin until the second year of the course; not until instruction has been given in the theory and art of education,—though a few who are more than ordinarily well prepared are occasionally allowed to begin earlier.

That the training work is a function of the model school which can not be ignored is, I apprehend, generally conceded by normal school men; but what it shall consist of, how it shall be done, is, so far as I can learn, not unanimously agreed upon. We at Normal have sought to arrange our plan so that the best good of both pupil-teachers and model school students shall result. To secure this end there are a number of important things to consider:

1. The prospective teacher should learn, so far as may be, what difficulties in school management he may expect, and how he may overcome them.

2. He should learn to be skillful in imparting knowledge.

3. He should be taught to be rigid, yet cheerful, in holding pupils to do the work assigned.

4. He should learn to arouse even sluggish minds to self-activity.

5. He should learn to wield a personal influence over pupils, that he may arouse their interest and ambition.

6. He should learn to acquire a comprehensive grasp of the teaching of any given subject.

7. He should be able to ask and answer the question, not merely how shall I teach this, but why should I teach it at all.

In short, he should be placed in such relations to the training school that he may be able to put into practice, successfully and immediately, that which he has learned as theory or fact. To accomplish the ends I have enumerated, it seems to me that the pupil-teacher must do real teaching, and not play teaching; that most of his effort should be continuous, and not spasmodic; that, so far as it goes, his teaching should resemble as nearly as possible what he must do when he takes charge of a school.

The pupil who makes a few paroxysmal efforts to teach in the presence of a crowd, and then stops, can surely not comprehend the difficulties of school management, or hôw to meet them, for the relations existing between him and his pupils are purely artificial. He cannot gain any enduring hold upon the minds of his pupils, for how can his spirit mould theirs when the two have scarcely met ere they part? Then, again, how can a teacher get any comprehensive grasp of the teaching of any given subject, if his teaching, like the bounding western cyclone, touches only here and there? And what is a teacher's experience good for, except as it enables him to stand above his work, so that he may take comprehensive views of it, properly subordinating every part? The pupils under such tuition become like the coquette, who changes lovers with every change in the moon,—fitful and capricious. Feeling little continued personality in their teachers, they become dull to the most useful and inspiring influences that a teacher can exert. Governed by these and similar considerations, those who arranged our present training work at Normal did so according to the plan I shall now describe.

The model school being drawn from all classes of schools, presents a wide variety of material upon which to work. When organized properly, it furnishes classes of good size and fair grading for from fifty to seventy recitations daily. These classes are put into the hands of the pupil-teachers for one term of twelve weeks, each teacher taking one class in one subject for one hour a day during the whole term. The classes are assembled in their respective grades at the beginning of recitation periods, being sent out one by one at the call of the pupil-teacher, who conducts his class to a regularly assigned recitation-room, where he proceeds with the business in hand as though he were in his own school.

Sometimes, if there are more teachers than classes, two teachers are placed with one class, one to teach and the other to observe the work and write his criticisms in his diary. The pupil-teacher in charge is visited every day or two during the term, or as often as is deemed best by the training-teacher, or by one of his assistants, who notes the faults or merits of his work, and who often takes charge of the class for a time, in order to give a model lesson. When the class has been returned to the assembly-room, the pupil-teacher returns to his regular duties in the normal school, taking the earliest opportunity, however, to visit the training-teacher, in order to receive his comments, criticism, and directions. Each pupil-teacher is required to keep a carefully written diary of all his plans and of the details of his class-work. In this book he notes all his experiments and their results, giving, so far as he is able, the reasons for their success or failure. The diary is handed to the training-teacher once a week, by whom it is carefully examined, corrected, and returned. Before the time for handing it in again, the pupil-teacher goes to the training-teacher, in order to show that he understands the meaning of all marks of criticism. On Monday afternoon, at the close of school, a teacher's meeting is conducted by the principal of the training department for one hour. At these meetings are discussed topics pertinent to the affairs of the model school, and to correct teaching in general. Four terms of such work as has been described, for each graduate of the school, is the extent of the training-work that is done in our institution.

If you are interested in this matter enough to read Professor James's article in a late number of the *Illinois School Journal*, on the normal school at Halberstadt, Prussia, you will note how the work there compares with what I have just described. Their model work, strictly so called, appears to consist of a model lesson given by the training-teacher once a week throughout the course, and to observation in the model school for one to two hours a week during the third year of the course. Their model work, therefore, including both model lessons and observation, amounts to about 180 hours for the whole course; ours to five hours a week for twelve weeks, or sixty hours for the course, or about one-third of theirs. Their training work comprises about five trial lessons by each pupil during the second year, and the same number during the third year of the course, and pupil-teaching for three terms of thirteen weeks each. So that in amount their training is practically the same as ours, with what I regard, on the whole, as a somewhat better arrangement. They have the same number of teachers' meetings that we have, but I see no provision for diary work, though that would hardly appear in their printed course.

On the whole, Halberstadt is ahead of us in model-school work, as might be inferred from the fact that their plan is arranged in conformity to an ideal, while ours, and I suppose every other in the United States, is arranged in view of the limitations which hedge in all normal-school work in this country.

I see no specific provision in their plan for experimental teaching, or for the work of a determining-school, nor is there in any normal school with whose work I am acquainted. All that is done in these lines appears to be purely incidental, and thus likely to be slighted. It is to be regretted that this is so, for normal schools should be the leaders in all that is new and valuable, rather than followers; and they should not leave to chance or tradition so important a work as the determination of the curriculum.

Recapitulating the conclusions of this paper, I find the function of model schools to be four-fold, the work consisting primarily of model teaching for imitation, and of actual pupil-teaching in the training department; incidentally of experimentation on new ideas and methods, and the determination of the kind and quantity of work to be done in the common school. I find that model teaching for imitation should come early in the course, and may profitably be confined to the primary grade; that the observers should be held for a reproduction of their observation, that they may be impressed with its plan and purpose; that pupil-teaching should come in the latter half of the course, and should be continuous, rather than broken, and, in the main, conducted in the presence of only pupils and training-teacher, rather than in the presence of a cloud of witnesses; that experimental and determining-work, though important, are now merely incidental, and, consequently, likely to be neglected.

Of the importance of the theme on which I have written, I can hardly say enough. Through their model and training schools must the normal schools of America look for the exposition of their best results, and through them, more than any other agency, I am convinced, must they look for the approval and support of the people. That is professional work which fits for teaching, and that is the best professional work which best fits for teaching; but to be properly appreciated and supported, our normal schools must not only *be* professional schools, but they must also *seem* to be professional schools. That the end and aim of model schools is professional, can be seen by everybody. That the end and aim of academic work in normal schools is professional, is not seen by everybody; so that to ignore, or to esteem lightly, the work of the model school is bad policy, to say nothing of the dwarfing effect upon the work of the normal school. It behooves, therefore, those interested in the highest success of normal schools to bring to bear every agency that tends to make their model schools better. Personally, I shall watch with deep interest the development of normal schools in America, for I am now on my way to Germany, there to spend some years in the study of Pedagogy that I may more efficiently help to lift them to the plane of their true scope and function.

EDUCATION OF THE HEART.

BY HENRY H. FICK.

The mystic power of three asserts itself in man's organization. Human nature is tripartite,—intellectual, physical, and moral. Mind, body, and soul,—three in one,—are welded in him who enters life. Threefold, therefore, must be the aims of that gradual developing which finds its culmination in the nearest possible approach to perfect humanity. It is an accepted doctrine that the educator should not merely bestow his care upon the cultivation of the intellect,—the mind,—but should keep in view as clearly the training of the physical powers, and concern himself not less faithfully about the education of the heart.

The emphasizing of the need of harmonious, complete, all-embracing education is merely a reiteration of the statements of the most eminent ancient and modern philosophers. Twenty-three hundred years ago Confucius believed the destiny of man to be the "completion of his nature;" and Pythagoras said, "Harmony in everything: that is the goal for which every human being ought to strive." It is impossible to improve upon this old-time definition of the purposes and ends of education. Nevertheless, no one will assert that the demands thus concisely formulated by the great teachers of antiquity are being satisfied by their modern followers, and that to-day's educational labors are in truth directed toward uniform mental, moral, and physical development. Public sentiment does not acknowledge the exigent demands of the triple alliance; it has set an unwarranted value upon the semblance of an accumulation of knowledge, and hence there is witnessed a species of idolatry of purely mental culture. The early forcing of the mind, not the healthy development of the whole man, receives the greatest amount of attention. From programs and schedules of instruction, only the existence of the head may be inferred, into which information much too previous is dropped as bales of merchandise are put into the hold of a vessel. Our matter-of-fact age worships the dollar, and countenances the belief that mental power will furnish traps with which to catch the bird laying the golden eggs. In blind folly it apes old King Midas, who, when Bacchus had promised to grant him the fulfillment of any wish he might express, desired that, at his touch, everything might be changed into gold. The first trial of the newly-gotten power brought trouble to the greedy king; for of what use a gift which transformed into solid metal the wine he wanted to quaff, and changed into a lump of yellow ore the bread that was to appease his hunger? The coveted power, when gained, proved a curse to the mythic monarch; much as the prized gifts, strength of mind, and intellectual dexterity are to those who rest upon naught but the glittering shield of Minerva. Knowledge alone, however far-reaching, is not a sufficient preparation for the duties of life. There are aims and aspirations higher than the balancing of ledgers and the calculations of business investments. There is something above the treadmill drudgery of the struggle for existence; something which really makes this life worth living, and without which our stay here upon earth is at best but a farce with a tragic ending. It is true that the modern age has revolted against the ascetic notion of the unholiness of the flesh, and so the attempts to strengthen the soul by killing the body, have been abandoned; but while the mind is cared for and the body receives attention, upon the sensibilities, the finer feelings, the character, is bestowed but passing notice.

Yet an athlete may be a dwarf in wit; Hercules, a most atrocious ruffian; and Phryne, beautiful as Venus Aphrodite. Cæsar Borgia added to the reputation of being the handsomest man of his time, the fame of being also the most criminal; and though Socrates was as wise as the oracle, he was a scarecrow in ugliness. An intellectual prodigy may be morally a cipher, blackening the fairness of his name by low and shameful vices. "Mind without heart, intelligence without conduct, cleverness without goodness, are powers in their way, but they may be powers only for mischief."

> "Talents, angel-bright,
> If wanting worth, are shining instruments
> In false ambition's hand to finish faults
> Illustrious, and give infamy renown."

Yet there are men, even if, "like angel's visits, few and far between," who, though not noted for social position or scientific standing, tower in moral grandeur compared with which physical beauty and mental attainments lie low. These are the men whose capital is their virtue; and has it not been said, "A handful of good-will is worth a bushel of wisdom"?

A century has elapsed since the philosopher Kant wrote: "We are living in an age of discipline, culture, and civilization, but not in a moral age. If we take into account the present condition of mankind, we are almost forced to believe that the rise of empires and states is concurrent with the misery of the people. The question yet remains unanswered whether a primitive condition would not be a happier state, uninfluenced by modern culture. For how is it possible to make men happy by mere schooling, if their heart is not at the same time, educated and cultured" ?

We have not advanced one step beyond the stand taken by the author of the *Critique of Pure Reason*. Let it be granted that this want of morality (spoken of by the sage of Königsberg) is less apparent. Is that a proof that the cankerous inroads of immorality have been checked? Let it be acknowledged that crimes have lost much of the fiendish brutality which marked them in former times,—can it be denied that they make up for that loss in their present subtlety and hypocrisy? Statistics show a decrease of crimes against the person, it is true, but they also bear witness that misdemeanors and civil wrongs, breaches of faith and trust, have increased in an alarming ratio. There may be less barbarity, less daring highway robbery, but there is an alarming preponderance of genteel rascality, of kid-gloved knavery, of that wrong-doing which substitutes slyness and lying for boldness and violence. Forgery, perjury, breach of promise, false pretenses,—all require, not physical force, but mental capacity. These are not so much products of chivalry; they are essentially modern iniquities. The inordinate desire for wealth and distinction leads to the most ruinous practices, and sanctions selfishness by the dishonest maxim that "all is fair in trade." To how many persons may be referred the forcible terms applied by Sir Henry Moncreiff to a man with whom he had many dealings: "He is a clever man, a kind-hearted man, and he seems to be a religious man,—in short, an excellent man,—only somehow or other, he is sadly deficient in common honesty."

It is not true that the well-stocked mind is a safe guard against the inroads of evil thoughts; on the contrary, if formerly ignorance led to crime, now-a-days a one-sided education,—an over-education in one particular direction, to the exclusion of everything else,—may be charged as the chief cause of moral turpitude. Extraordinary skill and uncommon attainments are frequently turned against those they ought to benefit. Many glaring cases bear emphatic testimony to this fact. Counterfeiters, working under trying disadvantages, deprived of the many aids and resources of the legitimate workman, have produced spurious notes and coin at an expense of marvelous skill. Witness the case of Doctor Lamson, executed two years ago in England. The talented son of a prominent divine, he commanded respect in society. His services in the Franco-German war had brought him honorable recognition, and after all, the want of moral conviction led him to the gibbet at Newgate as the murderer of a crippled relative. Witness Ruloff at Binghamton, who committed murder in order to obtain means for the prosecution of his studies. The ingenuity often displayed by criminals would insure their employment as experts in honorable callings.

Examples might be multiplied to show the fallacy of the belief that mental development is of supreme and all-including importance in education. "The best head, added to a wicked heart," says Tegnér, "is a treasury over a robber's den." There is less need of brilliantly-flaring, intellectual sky-rockets, than of less dazzling but steadily-gleaming tapers.

"The world wants men,—true men,—
Who cannot be bought or sold ;
Men, who will scorn to violate trust,—
Genuine gold.
The world wants men,—pure men,—
Free from the taint of sin ;
Men, whose lives are clean without,
And pure within."

Good moral character,—and I mean by the phrase not simply the absence of striking wrong-doing, passive goodness,—but the *effective* possession of sterling qualities and virtuous habits, has certainly risen in market value. The scarcity of the article is endangering the fabric of civilization. Would not corporations and firms, compelled to handle large sums of money, willingly pay larger salaries than usual, if assurance could be had of the absolute reliability of cashiers and confidential agents? Systems of education are unworthy of support by taxation, unless they adapt themselves to this fact. "Out of the heart are the issues of life." The poet Saxe beautifully expresses it:

"The head is stately, calm and wise,
And bears a princely part,
And down below in secret lies
The warm, impulsive heart.

The lordly head that sits above,
The heart, that beats below,
Their several office plainly prove,
Their true relation show.

The head erect, serene and cool,
Endowed with Reason's art,
Was set aloft to guide and rule
The throbbing, wayward heart.

> And from the head, as from the higher,
> Comes every glorious thought;
> And in the heart's transforming fire
> All noble deeds are wrought.
>
> Yet each is best, when both unite
> To make the man complete:
> What were the heat without the light,
> The light without the heat?"

To temper the intellect by emotive qualities, to awaken altruistic feelings, to bring business thoughts into the surview of a wide social economy, seems one of the main functions of education, in this sadly materialistic age of steam-presses, electric-lights, and telephones; in an era which travels by steam, writes by the aid of lightning, stereotypes the sunbeam, and flashes speech around the globe. Oh, how grand a vantage-ground for the true Millenium!

Acting upon Goldsmith's warning,

> "Ill fares the land, to hast'ning ills a prey.
> When wealth accumulates, and men decay,"

the true school will consider it a duty to counterbalance, as much as possible, the hereditary, or instilled selfishness of outer-life, and to supplement the world's cry, "Put money into thy purse," by the words "and kindness for all into thy heart!"

The conscience, not the purse, after all is the real citadel of a nation. "It is wiser philosophy," says a great writer, "to make the heart virtuous than the blood to run cold." How shall it be done?

Man is a reflex of the *habits* of his ancestors, *modified* by the *exigencies* of his *own surroundings*. *Moral habits* and *ethic principles* cannot be imparted by verbal statement, like principles of arithmetic or rules of grammar. No amount of text-book memorizing, parrot-like gibberish, will accomplish the end. Moral training has been theorized about and philosophized about too much, and practiced too little. Less *profession* is needed, but more *practice*. The heart is educated in exactly the same manner which is adopted in the case of the hand, the muscles, the eye. You cannot put together character, as you may the different pieces of a Chinese puzzle, but you may develop it and unfold it by constant example and direction. A true teacher may be likened to the sun, whose rays call forth grasses and flowers upon the meadow, but also responsive answers from the column of Memnon.

Magnanimity, candor, charity, industry, generosity,—these graces can never be set in children by teachers who are deficient themselves in them. Is it reasonable to expect that pupils will cherish Truth as a priceless jewel, when they listen to their teacher's evasive and prevaricating answers? The unfortunate system of demerits, credits, and per cents, I am afraid, works untold harm in this connection. The pupil's standing is based upon his marks; the teacher's reputation is staked upon work, which can be expressed in decimals. Whatever cannot be made to figure in statistical tables, is ignored. It will be urged that *all* instruction has an elevating, ennobling tendency. This is undoubtedly true of instruction in the best sense of the word; but it does not hold good in the case of the mechanical, soulless performances of many so-called teachers. Where are teachers, I ask, who possess enough courage and respect for their profession, not to quail before the terrible Juggernaut of examinations? Where are teachers who do not fear to face the odium attaching a failure to answer eighty out of a hundred catch-questions, if they are conscious that they have labored faithfully for the mental, moral, and physical betterment of their wards; conscious that they have tried to give them not only knowledge, but above all, to awaken in them "thoughts which breathe and words which burn"?

The majority of teachers, knowing that, all declarations to the contrary notwithstanding, the so-called "solid" branches count in transfers, hold themselves in duty bound to obtain per cents., and think little of the cost. Does not this set a premium upon dishonesty, and openly indorse the maxim that only he is punishable who allows himself to he caught? It teaches that a deviation from the most direct route to the end of the syllabus is attended by disastrous consequences; that loitering in the work of gathering some knowledge from text-books avenges itself on the day of examination; and falsely asserts, that the unseen but lasting good done by impressions upon the heart vanishes into air, and, as compared with the per cent. sacrificed, is an *ignis-fatuus*, a Will-o'-the-wisp. This is the reason why incidental instruction is neglected; why the teacher adheres slavishly to the prescribed course of study. It explains, furthermore, the idolatry which is carried on with the "staple" studies, arithmetic and grammar; and the slight put upon studies which, like history and literature, music and drawing, appeal to the feelings and to the imagination. Mathematics and grammar, it is true, will accustom to accurate and logical reasoning,—will serve as the grindstone of the intellect, aside from their great practical usefulness; but they are one-sided, foreign to sublime aspirations, and do not touch life's most important relations, the conditions of spirit-grandeur and calmness, called happiness.

Goethe was right in the following statement: "Those sciences cannot wipe out prejudices, cannot mitigate obstinacy, cannot appease partisanship, for they are deficient in ideal and ethical spirit." Persons who neglect them may run the danger of becoming fantastic weaklings; but those who cultivate them to excess, are apt to grow into cold narrow formality,—so much so that, as a friend of mine affects to believe, even their bones after death will be found arranging themselves in geometrical figures.

Far be it from me to detract one iota from the importance of severe mental discipline. It is not the regulated, healthy studying which carries off the prize. Examinations, both of pupils and teachers, are little more than a lottery of catch-questions; and he who dreamed the lucky numbers, or chances to walk the examiner's special path, secures by it the scholar's prize, the teacher's certificate, or the collegian's degree. Moral worth ought to be rated far higher than answers to set questions. Conditions in existing state of affairs, which leave the educators of youth annually at the mercy of local politicians and ward delegates, will ever prevent the ideal test in examinations of candidates; a view of the actual school status. Under the present school system, there is hardly a check upon the introduction of poor but influential teachers, yet one unfaithful teacher over a class of children is as the tempter in Paradise. The terrible responsibility of his position is aptly illustrated in a Russian story:

"Once upon a time, two souls arrived in the lower regions to suffer the consequences of their misdeeds upon earth. The one, in life, had inhabited the body of a cruel robber and cut-throat, who had openly arrayed himself against his fellow-creatures, and was guilty of the most heinous crimes. The other was the soul of a teacher, who had not used to the best advantage the privileges of his office, but had been derelict in his duties to the children under his care. Each, upon arrival, was hurled into a separate huge cauldron, under each of which crackled a blazing fire. Ages passed. The fire under the robber's tank gradually sank and died away; but the blaze under the neighboring cauldron continued unabating. At length the tortured spoke up, complaining of the manifest injustice of the punishment meted out to him, as compared with that of his companion. Then a voice made answer: 'Ponder upon the magnitude of thy wrong-doing. Lo! the robber and murderer simply stole what, sooner or later, Nature takes away; but thou didst kill opportunities of improvement; thou didst steal multitudinous chances of good. The subtle poison which thou didst allow to escape has crept into crevices and nooks and, festering there, has bred loathsome pestilence, and all eternity cannot remove its taint. Seest thou now the justice of thy prolonged damnation?' And the flames rose higher and resumed their dance around the white-hot cauldron."

The school is only one factor in education. Added to its work must be the influence of home and that of the outer world. During the pre-school age, the mother is the chief moral educator. With the child's entrance into the school-room, the teacher's influence becomes fully as strong as that of home. It is peculiarly strong and momentous, because it exerts its formative power during a period of transition from the narrow circle of home to the ever-widening arena of public life. Not very many parents are able, or feel disposed to acquaint themselves with the details of their children's education. They throw the entire burden and responsibility upon the teacher. Into the theatre of the class-room are gathered daily from forty to sixty children, coming from widely-differing homes. The true teacher —one who looks upon his calling as a sacred trust, and does not profane his office by mercenary considerations,—sure that the *intellectual* harvest will not fail,—undertakes the *moral* training with reverence and confidence. He knows that his work in this direction will count when youth has turned into age, and book-teaching has long been forgotten. "Man," as Bacon says, "is a composition of habits," and Metastasio, ignoring special transmitted germs, writes: "All is habit in mankind, even virtue itself."

And so, after all, to lead the child to *see* what is right and to *understand* what is wrong is not so very difficult a matter, provided we have the right *examples*. But it is difficult, with the mixed examples before them, to bring them always to *act* in the direction they *know* to be proper. The majority of pupils do realize the wickedness of lying, yet how few will not yield to the impulse of trying to escape censure or punishment by denying the truth. Doing good must be practiced. The mind, condemned to solitary confinement, becomes imbecile; the sturdy arm of a blacksmith, if carried in a sling, ere long loses its strength. *Moral feelings not developed and cultivated by doing, die of inaction.* The educator's care must not only be to impart the moral, the true by words, but to render the same active by exercise and example. Teachers who understand the art of turning the events of daily life into object-lessons for the advantage of their pupils, will find ample opportunity. What glorious lessons on the beauty of charity and liberality might be drawn, and undoubtedly have been drawn, from the floods which, abroad and at home, brought misery, yet appealed not in vain to the generous spirit of our people! A wealth of generous ideas and humane feeling could have been brought in the wide field of unselfish love by the child's mite!

Parables and anecdotes should frequently be interwoven with the threads of imparted information. How many moral lessons may be taught from history! The sacredness of pledges and vows may be illustrated by the story of Regulus, whom moral sense of duty influenced to return to Carthage, where he knew that torments and ignoble death awaited him. What more forcible tale of submission under the law can be found than that of Socrates refusing to escape from prison. and cheerfully drinking the deadly hemlock, to which a partisan justice had condemned him? There is moral grandeur of a high type in the conduct of Fabricius, who rejected with horror the overtures of a physician to poison his antagonist, Pyrrhus. Who doubts that telling how Petrarch's simple word was accepted as equivalent to the oaths of others, would deeply touch the heart of children, and though it might cause a break in the train of studies, by its direct influence, cause immeasurable good? And, to come nearer home, neither history nor poetry celebrate a sublimer act of devotion than that of Albert G. Decker, a watchman at the Passaic river drawbridge, on the New York and Newark railroad. A train was due, and he was closing the draw, when his little child fell into the deep water. The child could only have been saved at the cost of other lives. The brave man did his duty, but his boy was drowned. There, too, is the instance of the engineer who recently stood to his post upon the burning locomotive, saving the lives of the passengers at the expense of his own. Instances of heroic and patriotic deaths under the most trying circumstances; examples of filial devotion, of charity, of benevolence, of love for fellow-men, are treasured in the heart of the true teacher, and are ever ready to serve as the basis of admonition and instruction.

"Biographies of great, but especially of good men," says Smiles, "are most instructive and useful as helps, guides, and incentives to others. Some of the best are almost equivalent to gospels, teaching high living, high thinking, and energetic action, for the individual and the general good."

Periodical literature for children might be made one of the most valuable instruments of moral education: it is surprising that educators do not rely more upon its aid. As it is, a great deal of mischief is done by agencies from which it should be least expected, counteracting good influences. Sectarian censor-spirit has gone so far as to lay its interdict upon publications not up to its standard of speculative orthodoxy, criminally careless of the fact that such discrimination necessarily diverts youth to the vile, trashy, sensational literature which marks our time. Firmness and perseverance on the part of teachers and parents, coupled with strict supervision, is the only remedy in such cases. All the talk upon this subject but gives a zest to prurient curiosity, and advertises "Bob Renegade, the Outlaw, published by John Hitemhard, Murder Alley;" or, "How I Ran Away from Home, by Jim Daringdash, author of many soul-thrilling, blood-curdling stories."

Even more important than the consideration of current juvenile literature is a revision of the subject-matter in our school-readers. Why should they bring a list of lessons about the "Insolent Boy," the "Truant," "Unkindness," etc.? Such reading savors too much of the Upas-tree. Let them chronicle the good, speak of the value of honest toil, the satisfaction attendant upon the faithful discharge of duties. Let them impress the young reader with the beauty of veracity under all circumstances. Poetry has long been made the vehicle of the happiest moral delineations and the most effective appeals to our nature. Prose can also be found in abundance well adapted to serve the purpose in question. The efficacy of frightful examples is, at best, very doubtful.

It is said that the Spartans taught their children sobriety by exposing to their sight drunken slaves. Would you instruct the rising generation in dramshops, and in dens of iniquity? Would you have it study in the police-court, and graduate with forgers and swindlers? Why then parade illustrations of wickedness, when it is known that the contagious influence of bad example is more powerful than any antidote? For one who is kept thus from wrong-doing, five succumb to the innate, irresistible propensity to imitate. Some natures retain their spotless purity under the most adverse circumstances; but the prudent gardener keeps undecayed fruit apart from that touched by the rot.

I have purposely refrained, in the foregoing, from touching upon the subject of religious instruction, and avoided the question of the Bible in the school. The spirit of religion undoubtedly ought to imbue our moral education, but the teacher should steer clear of the merely sectarian dogma. No one, no matter to what sect he belongs, or how far removed from any sect, would desire his child to avoid the knowledge of those glorious truths, those sublime examples, those high doctrines recorded in the poetic language of the "Book of Books." As a recent writer in the JOURNAL OF EDUCATION well puts it: "On lesser questions, Protestants, Catholics, and Jews cannot in conscience agree; but on questions of heroism, of high moral purpose, of hope, of faith, the kindling eye bespeaks our kin." When the beautiful verse of Terentius, "I am man, and cannot be a stranger to anything human," was for the first time publicly expressed in Rome, there ran a general murmur of applause through the amphitheatre. Would that such might be the case now! We have accustomed ourselves (deceived by the familiar picture which makes the educator see in the faint charcoal sketch upon the artist's easel the splendor of the finished portrait) to look at the outward appearance, the (sometimes counterfeit) manifestation of knowledge, will, and power. Fully, nay more justly, might we think of the moving thoughts, the feelings, the heart. Oh! could we view our pupils, acting like Stephen of Colonna, who, when he fell into the hands of his base assailants, and they asked him in derision, "Where now is your fortress?" simply replied, placing his hand upon his heart, "Here!"

PRACTICAL EDUCATION.

BY WILLIAM MORTON PAYNE.

In this age of ours which is "nothing if not practical," we are accustomed to look with a half-pitying scorn upon the one who ventures to assert that its tendencies and aims are not the highest possible, and who dares challenge a comparison, and perhaps an unfavorable one, with some age merged in the past long since, and with which we flatter ourselves, in our self-sufficiency, that we are well done. We throw ourselves beneath the wheels of the locomotive-engine, true car of Juggernaut, and in base ecstasy of worship, stop our ears to the voice of the sage who tells us that our idol is, after all, a creature made with hands; that steam-engines are not the things most essential to civilization; that civilization could get along very well without them; that in our infatuation for the material things of which they are the fitting type, we are forgetting, if we have not already well-nigh forgotten, the higher things of the spirit.

> "The world is too much with us, late and soon
> Getting and spending, we lay waste our powers."

This noblest utterance of Wordsworth finds little echo in the ears of men who believe in all sincerity that the material advancement of this century is an unmitigated good, and that mankind is to-day actually, by just so much, better off than ever before.

It may indeed well be that Mr. Carlyle and Mr. Ruskin, in the white-heat of their indignation, have given expression to sentiments that cannot be honestly shared even by those who, free from the prevailing idol-worship, are capable of giving them dispassionate consideration. They have both, for example, said things on the subject of political economy which, from any other lips, would be deserving of no other comment than a smile, but which, coming whence they do, are at least deserving of respectful consideration, as affording indications unmistakable of the moral fervor which animates these men, if for no other reason.

It seems to be a law of human development that no error can be successfully combated save by an opposite view almost as extreme as the one fought against. Nothing is more clearly indicative of the moral corruption which such men see in our age of comfort, than the extreme remedies which they suggest. The Don Quixote of popular imagination, who fights with wind-mills, is, no doubt, sufficiently amusing; but the real Don Quixote, as Cervantes meant that we should see him, the sensitive, refined, noble nature, surrounded by a world so vulgar, so incapable of construing the motives which actuate him, and of greeting with aught but ridicule his noblest impulses, that he is driven to madness and the ideal world of his own creation for solace,—this should leave us grave, rather than smiling,—this is matter not for laughter, but for tears.

In the pages of the greatest teacher which our age is fortunate enough still to possess, I find such words as these: "Modern education, for the most part, signifies giving people the faculty of thinking wrong on every conceivable subject of importance to them." Considering whence it comes, this is a serious charge, and well worthy of our attention. I find elsewhere in the same book the following passage, which may perhaps serve to make clearer the meaning of the writer, and which will furnish the key-note of what I wish to say in this essay. "It happens," Mr. Ruskin says, "that I have practically some connection with schools for different classes of youth, and I receive many letters from parents respecting the education of their children. In the mass of these letters I am always struck by the precedence which the idea of a 'position in life' takes above all other thoughts in the parents',—more especially in the mothers' minds. 'The education befitting such-and-such a station in life,'—this is the phrase, this the object, always. They never seek, as far as I can make out, an education good in itself. The conception of abstract rightness in training rarely seems reached by the writers. But an education 'which shall keep a good coat on my son's back; an education which shall enable him to ring with confidence the visitor's bell at double-belled doors; education which shall result ultimately in establishment of a double-belled door to his own house; in a word, which shall lead to advancement in life.' It never seems to occur to the parents that there may be an education which, in itself, *is* advancement in life; that any other than that may, perhaps, be advancement in death; and that this essential education might be more easily got, or given, than they fancy, if they set about it in the right way; while it is for no price, and by no favor, to be got, if they set about it in the wrong." . Let us see what light may be thrown upon the problem by the conditions of modern life, and endeavor to ascertain if they be such as to encourage the acquisition of that education which, in itself, *is* advancement in life.

That a great material development is the most marked characteristic of this age, there can be no manner of doubt. In the civilized countries of the world of to-day, the thoughts of men are directed rather to mechanical inventions than to artistic creations; a new machine is of vastly more consequence than a new poem. An idea brought forward, whether new or old, is judged solely with reference to the narrow expediencies of the moment; if it fit into the order of things as existing just at present, well and good; if not, it is visionary,—very well in theory, but impracticable, and practical men will have nothing to do with it. Let us consider for a moment what this state of things means, and this first, from the standpoint of the politico-economist.

It means, to begin with, that a given nation for the same amount of work as in times past is able to produce a much larger aggregate amount of the things which are needed to satisfy human desires; to a certain extent, better food, clothing, and shelter, but especially many things which, although not necessaries, are very pleasant things to have, and which formerly were not to be had at all. Viewed in this light alone (and in this light alone do most men view the matter), the state of human affairs seems cheerful enough, and the causes which have operated to bring about such a condition of things fit subject for unlimited complacency. So pleasant a subject of contemplation does this prove to most men, that they lose sight of the real question involved, which is *not* whether men to-day can satisfy a greater number of desires than they could formerly with a given amount of effort, but whether the ratio of satisfied desires to those remaining unsatisfied is greater now than in times past. This is the real question, upon the answer to which must depend the attitude we assume toward the material prosperity of the age. It is not to be disputed that men are to-day, on the whole, in possession of more comforts than at any time in the past. It is very much to be questioned if they are any happier, on the whole, than they have been in times past; for happiness, as far as it may be said to be proportional to anything, is not proportional to the number of desires that are gratified, but to the ratio between these desires and those which are not gratified. We know well that, as the desires of men become fulfilled, they invent new objects of desire; and if those new objects keep pace with those which, being gratified, no longer occupy the mind, men may be no better off than before, and a man born in the ninth century may have stood just as fair a chance of happiness as one born in the nineteenth. I do not say this because I think that men are equally well off in all ages, but simply to expose the utter fallacy of the vulgar assumption that an age of material prosperity, is, of necessity, an age of wide-spread happiness, and to place in a clear light the fact that individual happiness depends upon too many things to be determined by a mere summing up of satisfied desires.

Let us again, for a moment, assume the standpoint of the economist, and inquire into the conditions of this material age, which offers so many problems to the thinking mind.

We find the chief cause of this condition of things to be the more intimate relations between different countries, and the consequent vast extension of the principle of the Division of Labor. The extent to which this is carried is, of course, something quite unparalleled in past history, because simply impossible in any age preceding our own.

In the *Poet at the Breakfast Table* we read of a man whose life is devoted to the study of insects, but he disclaims, as bordering on the impious, the presumption of styling himself an Entomologist. No man may rationally aspire to higher glory than to be known as, for example, a Coleopterist, and he will be quite content, for his part, if he may be found worthy of the name of Scarabæist!

Adam Smith tells us, and economists delight in repeating the story that in the manufacture of a pin there are some twenty distinct operations, which are performed by as many persons, each of whom makes one of these operations his life-work, pursuing it as a trade and coming eventually to be possessed of astonishing dexterity in drawing out the wire, or in cutting it into lengths, or in making the point, as the case may be; all of this being to the end that the twenty men together may make many more pins than could be made were each of them to perform all the operations and make his own pins. This is a concrete illustration of the state of things which so marks off the present age from all others. It may be expressed, in general terms, by saying that the work which the world wants done is parcelled out into a constantly-increasing number of occupations which, as their number is increased, become proportionally narrow in scope, and that the narrower the field which a man assigns himself for the labor by which he must gain his livelihood, the greater his chances of success.

This is both a tendency and a fact. A fact, in that the system which it represents has already gained firm foothold in every important branch of human effort; a tendency, in that all classes of effort are daily becoming more and more specialized. To the extension of this system there seems to be no assignable limit; the question arises, Is it a tendency to be regarded wholly with approval? Is it something to be encouraged to the utmost by the men earnest for the good of mankind? In the highest sense, and viewed in the light of the largest expediencies, does it pay? To no one does this question come home with such force as to the educator, for in his hands is placed its decision, and never before has he been called upon to make a decision so momentous.

It may be urged that those who have control of education are but the representatives of the people, and, as such, are bound to respond to the popular demand. In this there is but a slight measure of truth. The theory that a public representative is a mouthpiece of popular sentiment, a mere machine for acting and voting according to the dictates of his constituency, has not yet gained universal assent even in the sphere of politics. Were educational affairs and those who control them wholly identified with the machinery of political life in this country; even then a man, who, intrusted with such affairs, should act upon his own principles and independently of popular clamor, would not be without approval. Since educational affairs are, as yet, largely separate from purely political interests, those who directly manage them are almost wholly free to act as they may think best, and they have upon their side, should they resist the popular pressure, the vast conservative forces of educational tradition, which, whatever its faults, does not encourage the practical tendencies of modern life.

Let the question be distinctly understood. We have, on the one hand, the principle of Division of Labor. We have pointed out to us the great increase in the production of useful articles unmistakably due to its wide-spread application. An inevitable logic assures us that this application is capable of an indefinite further increase, with a correspondingly indefinite increase of production, as the result of the same amount of labor as at present expended. The prospect is truly a tempting one; but let us not forget that, with each satisfied desire, a new one,—perhaps several new ones,—will arise, and placed before our excited imaginations will tempt us still farther onward. When Socrates saw the goods displayed for sale in the streets of Athens, he said, "How many things there are which I do not want!" Far different from this is our modern, unphilosophic temper, which is not only desirous of all the things it sees, but no sooner gets them than it discerns quite as many more things that are with equal intensity desired.

If the wants of men were not thus capable of indefinite increase; if they were to be regarded as a fixed quantity, to be satisfied by the least expenditure of effort possible, then the principle of the Division of Labor, extended to its utmost practical limits, or any other principle whose application should lessen the requisite effort, might be welcomed by all who have the interests of mankind at heart; for a means of livelihood, which, although narrowing in its tendency, should require less of a man's time, and should leave him more for the higher uses of time, might be a thoroughly desirable substitute for a more varied employment which should leave him less time available for other purposes. But this, unfortunately, is not, and it seems, in the present state of civilization, cannot be the case.

What, then, do we find to be true? Simply this,—that in all the departments of human effort the work of the individual is becoming more and more narrowed in its scope; that while men continue to work as hard as ever, their spheres of action become smaller and smaller; more and more is the mind dwarfed by the close confines in which it is allowed to move; less and less is life made worth living by the stultifying monotony of the work on which men depend for the questionable blessing of its maintainance. Here, if ever, is application for that stern scripture, "What is a man profited if he shall gain the whole world and lose his own soul?"

For it is well to call things by their names, and this modern life is cities and in manufacturing centers is for the majority of men, in the strictest sense of the word, soulless. Now this state of things in brought about by an adherence to the principles of the economist, and the energies of the civilization of to-day are chiefly devoted to the acquisition of those forms of wealth alone of which he can take cognizance. The kind of wealth which has made the greatness of all the nations that have been truly great in the history of the world is not the kind for which we are so pitifully striving to-day, — it is not produced in accordance with the law of supply and demand; nor is its value fixed by competition; least of all is it based on the division of labor. For such wealth and such greatness are the attributes only of a nation which is composed of men,—not of crippled mechanical semblances of human beings, but of men intelligent in knowledge of what is necessary for a symmetrical existence in their age and country; healthy in the possession of minds and bodies, the outcome of the harmonious development of the physical and mental faculties. These must be possessed by a country which shall be worthy to lay claim to any part of the glorious inheritance of past ages, and these are not what the present stage of civilization is tending to produce.

It is worthy of our most serious consideration that, in the great age of the Athenian democracy, not only might the humblest citizen attain to the highest dignities of the State, but that the choice was made by lot, so high was the general average of intelligence and ability among the Athenian citizens; that is, every citizen of the

State was supposed to have received the training necessary to enable him to fill the highest offices! Let us for a moment imagine this state of things as existing to-day, and reflect upon the amount of intelligence and ability that would be brought to a high office by the average voter.

And now that we find ourselves in the midst of this condition of things, whose unmistakable tendency is to make dwarfed and one-sided the lives of the majority of men, and to take from labor the dignity which once belonged to it of right, upon whom or what shall we cast the blame? Upon the economist? Not largely, I think. He, as a rule, is an honest and sincere worker in his sphere; his principles are legitimately established, and their truth may be determined by the same tests as apply in other departments of science. Not here, then, does the blame attach itself, but rather to the fatuity with which we have made this science of Political Economy or of self-interest the science of conduct, and have refused to recognize that human life is too large and complex a phenomenon to come wholly within its field. However, the question of the causes which have operated to bring about this state of things is, perhaps, a fruitless one; not so that other question, of what is to be done to counteract this tendency, some of whose fatal results we have already seen, and others of which we may, without any great exercise of prophetic power, foresee.

The chief agency which may be called upon to aid in counteracting this essentially fatal tendency will be found in the educational forces which we control, and we shall best work to this end by striving to the utmost to make of the education which we give to a child something which is, of itself, a good thing; something which is, in itself, as Mr. Ruskin says, "advancement in life," and which has beyond this, at least immediately, no particular purpose; which is not directed especially to the fitting of a young person for some special walk in life, which we, with our imperfect vision, imagine to be the one for which he is best fitted, but which subordinates every lesser aim to the one great one of securing the harmonious development of the powers of mind and body, in which the *mens sana in corpore sano* is the one thing to be attained. We may rest assured that, if we secure this, "all things will be added unto it" without our exertions: that is, all things which are consistent with the limitations immutably set for the individual at the beginning of his career.

There is a natural limit to what a given individual can, under the most favorable circumstances, accomplish; but it may safely be said that the lives of few ever approach that limit, as in the vast majority of instances, vicious educational influences, surrounding the child from the very cradle, act constantly in the direction of curtailing the fulfillment of the possibilities born with him.

This idea of the harmonious organic growth of the mental faculties is, in the paths of many, a stumbling block, — to others, simply foolishness. We are told, in substance, something like this: Most children develop at an early age special aptitudes, and are particularly inapt as regards certain kind of work which they are required to do. Now the work of the world is done chiefly by specialists, by men and women who devote the chief part of their energies to some particular kind of work, and usually in a quite limited field. Why should we not, knowing this, so shape the training of our children as to fit them for the pursuit of that kind of work for which they display such an aptitude, rather than waste our time and theirs by applying it in directions in which nothing higher than mediocrity seems attainable? In a general way I have already considered this plea, but will here examine it a little more closely than heretofore. To do this, a concrete illustration will aid us materially. Let us take the common case of a boy who likes mathematics, and gives unquestionable evidence of mechanical talent, but who exhibits an unmistakable aversion to the history of his country; to whose mind arithmetic acts as a stimulus and the Revolutionary war as a drag, and to whom a tool-chest embodies the highest of delights. Why, we are asked, should this boy be tied down for weary hours to his history-lessons when those hours might be delightfully spent in the workshop; and all this in such an aggrieved way, and with such show of indignation at the inhuman system which is responsible for this tyranny, that those of us who believe that the old way is, in the main, right after all, find ourselves somewhat at a loss for an effective answer; knowing that the true answer to all of this is of such a nature as to appeal, indeed, to all reflecting minds, but not to minds of the vehemently superficial type with which we are confronted.

How many times in the history of opinion has it not happened that error has gained and maintained the ascendency simply because its arguments, although fallacious, being based upon an imperfect conception of the real conditions of the case under discussion, have been of such a nature as to appeal to the sympathies of the mass of men, in whose minds sympathy and impulse usually take the place of reason and judgment, and who are not, as a rule, prompt to detect deeply-hidden fallacies; while the true presentation of the case, appealing, as it has done, to a deeper insight and logical powers of a fairly high order, has appealed only to the reflecting few who have been, because so few, powerless for the time to check the influence of the prevailing sentiment!

Now, in the case which is at present under consideration, it is obviously an easy matter to arouse the sympathies of most people by a touching picture of the miseries of the boy as he pours over his dreary, unmeaning, tasteless task; given him, forsooth, that he may grow up in just the same way as all the other boys about him at school, and at the expense of his natural talent, which would lead him in a quite different direction. I will not attempt to fill in the picture, for we are all familiar with it. I will, however, try to make the broader statement of the case, which I conceive to be the true and fair one.

There are certain faculties which coëxist, and with almost the same relative degree of development, in all healthy minds. These faculties may be roughly enumerated as the perceptive, mnemonic, ideational, reflective, judicial, imaginative, and volitional. It is the aim of education to aid the development of these faculties, each in its just degree. This, be it observed, does not tend to repress individuality. Mental individuality does not depend upon the broad, general facts of mental organization, but on the many details; just as physical individuality does not depend upon the number and relative shape of the bones of the skull, which is about the same in all cases, but upon the countless minute differences in the features and details of the head. Skulls have little individual expression as compared with faces. The mental individuality which has characterized the individuals of the most highly intelligent communities has been based upon a comparatively uniform substructure of the broader faculties of the mind. A mental individuality, whose physical parallel would be a nation of all manner of deformed and crippled men and women, is not a desirable thing to work for. Nor do we, when it is a question of physical education. If our children have stunted limbs, or weak chests, or deformities of any kind, we exert all our energies to bring these organs to their proper degree of development. We do not give our attention to the strong and healthy organs because they are more promising than the weak ones. We very generally recognize the importance of a full, many-sided physical development, so that our educational ideal has not as much to contend with in this quarter as in others. When, however, we come to a consideration of what is best in mental development, we find that many would cast aside the physical parallel which immediately presents itself, and make application of a new and utterly indefensible principle, becoming advocates of a one-sided, unsymmetrical development of the powers of the mind, when they would indignantly reject any proposal to pursue this plan in the training of the physical powers.

The mind is, after all, a part of the body, and is subject to the same general laws as the organism of which it is a part; that is, to the laws which govern all organic life and growth. Now the essential characteristic of the organic structure is that each part both affects and is dependent upon all the others; that each organ is at once means and end, and that a weakness in any one respect is sure to impair its functional activity in all respects.

Intelligent work of every kind, including all manual work, — that is, all really manual or handiwork that is not degraded by being made subordinate to machinery, that whatever mechanical appliances it may call into its service, directs and controls their action; all such work, as well as all mental work of any other than the lowest order, can only be well done by men whose minds are developed in the same way in which their bodies must be developed if they are to enjoy healthy, physically active lives,— that is, by men in whom the elementary mental faculties are in due proportion strong and active.

From all this the obvious inference is that there should be no great difference in the training given to different minds; that such differences as obtain should be based, in order to be justifiable, upon the differences found existent between the minds to be operated on at the time when their education is taken systematically in hand,—such differences arising partly from the influences of the period preceding that of the beginning of systematic education, but chiefly from innate characteristics,—and that the different plans pursued should have as their object not the common one of strengthening the healthy faculties and leaving the weak ones to take care of themselves, but the more rational one of aiding the deficient powers rather than those that are not in need of such assistance.

The thing chiefly important is to determine as accurately as possible the nature and order of development of the elementary faculties of the normal mind, and with this as a guide, to fix the nature and sequence of the studies found most suitable for the harmonious growth that it is our aim to secure. Having thus based our plan of education upon the immutable laws of psychology, we shall find little difficulty in its adaptation to the most abnormal cases that present themselves; and there are many such.

Hardly less frequent than those whose abnormal character depends upon the inherent weakness of certain faculties are those which exhibit an abnormal sequence in the development of these faculties, some of which may not make their appearance in due prominence until late, but then in full force of vigorous health. All of these possible contingencies must be provided for, and no psychologic insight can be too keen for the diagnosis of some such cases. And yet, to be fully successful, our system need not be a rigid one. In one sense, indeed, it must be, in following the laws of psychology and keeping ever in view the principle of healthy, many-sided development as the one thing to work for; but in no other sense is it necessary. There are many ways of attaining this end; that is, there are many ways of cultivating the perceptive faculties, or the memory, or the imagination. At the very beginning of school-education there is, perhaps, less choice of methods; but the farther on we get, the more ways we have to select from. The history of one country is of about the same educational value as the history of another. One of the natural sciences cultivates the observant faculties about as well as another. One kind of mathematics teaches strict reasoning and close regard for truth about as well as another. But, whatever studies are selected to form the course pursued, the selection should be governed by a close consideration of what they can do for a child; not what useful knowledge they can give him, — this is an exceedingly small part of elementary education, — but what they can do in building up his mind. What I wish to emphasize is, that the primary object of education is to make men and women, and that the fitting of these men and women for their special work in life is but a secondary object. I do not say that this secondary object should be disregarded, but I insist that its secondary nature should be distinctly recognized, and that it should be subordinated to the chief object in view, which is not that of tying a person down to some narrow line of work, but that of opening to him as many avenues as is possible, and giving him the largest freedom of choice, so that when the time does come for him to select the special work of his life he shall be able to make his choice intelligently, and shall really know what he is best fitted for. Nor should this choice be made at too early an age.

How many mistakes have been made, and how much misery has been entailed, by the shaping out, on the part of parents, ambitious or otherwise, of the future lives of their children at an age too early that it should be possible for parental or any foresight to act wisely in the matter, — forcing the young, expanding energies into narrow, unyielding moulds, stifling perhaps the finest and most fruitful impulses, and resulting in misspent lives! For how many of the "village Hampdens," and "mute, inglorious Miltons," is not this theory of fitting children for the station which they will presumably occupy in life responsible?

Why should we, after all, be in so great a hurry? What are the real ends of life, for the attainment of which we hasten through school and college as a mere preparation? What is it that men expect to obtain in those after-years that makes the education of the earlier ones seem to be but a means to an end? In what way is the struggle for gold a higher and finer thing than the storing up of mental riches, than the growth of true power? Are, then, the rewards of the busy, pushing life of the world so great? and is there no meaning in the common saying that the school-days are the happiest of life? And if there be a meaning in it,—and for the majority of men there is a profound one,—why must leave be taken of the employments which lead to such keen pleasures as soon as the serious work of life is entered upon? Why should we speak of that part of life which only brings with it toil and weariness and inadequate reward, if not total disappointment, as the only serious part of it? In one sense, it is indeed serious; but in what another and higher sense is the work of mental and physical development a serious one,—for the measure of its success is the measure of the success of life in the only sense in which life may be said to be in reality successful, and upon it must be based all of the enduring, unalloyed happiness that life can offer?

The saddest thing that modern life has to show is the common spectacle of the man who, after a youth surrounded by the best of intellectual influences and with a mind in vigorous health, just on the threshold of manhood, deliberately casts himself loose from the associations and ideas which have made him what he is, and, in the way of the world, devotes himself to money-getting; leaving idle or directly abusing his best faculties, and having no sense that he is doing all this at the fearful cost of the very power to enjoy in much other than brute fashion the things that money can procure; unconscious that from that time onward he is retrograding, however much he may appear to be making progress, and that the years that might witness his most vigorous growth only serve to register his untimely decline.

But in thus urging that all life should be one continued growth, we must especially consider the part that school-education should play in the scheme, and how it may be best made to assume its proper relation of an introduction to a vast work completed long after the school is left behind. It is a very trite, although a very praiseworthy saying, that education does not end with the completion of the school curriculum, and yet the inspection of many a course of study would lead to suppose the exact contrary to be the case, so many things being included as to leave the impression that the whole field of knowledge is covered, leaving little to be explored in after years.

Some one has well said, that "knowledge, to grow, must be planted with the roots." A great deal of education seems to resemble those gardens that children improvise in an hour by taking detached branches and flowers and thrusting them in the earth; for some time they will appear bright and fresh; by dint of much watering they may maintain a fictitious life for a few days; it may be that some few of them will take actual root in the soil. But most of them will wither, and some cannot, by any care, be kept from drooping at once.

Now the time spent in the imparting and the acquisition of an education like this is simply wasted, or, at least, earns only what recompense is afforded by the few ideas which obtain such vigorous hold on the mind as to take root there. Yet much education is of this type, and for the obvious reason that it is more effective than the kind which follows the laws of nature in organic growth, and either sows the seeds and waits for them to come up, or transplants with care the whole plant, roots and all. Superficial persons judge the value of education by its immediate visible results, and the immediate visible results of this sort of education are much more striking than those to be obtained in any legitimate way. It is very much too good to be true.

Now, if this is to be remedied, two things must be done. We must begin by covering less ground than is customary, and by a concentration of the energies usually exerted over a large field upon one of less extent, to the end that whatever is learned shall be learned so thoroughly, and so viewed in all its bearings, and brought into such relations with all that is already possessed by the mind, that it shall become an integral part of the mental possessions, and henceforth so remain, being indissolubly connected with all that has preceded it.

Having thus made certain its retention, we must provide for its future growth. A subject is often studied in such a way as to produce in the mind of the student the impression that the whole subject is confined within the limits of the particular treatise which may be used as a text-book. As long as teaching is done in this spirit there is no hope of real success. Unless the feeling that the subject is illimitable is early engendered and constantly deepened; unless each new step taken, or new ramification entered upon, is made to reveal boundless vistas hitherto unseen, the main aim of teaching has been missed. And this feeling must not only exist, but it must give birth to the desire to explore these tracts thus brought to view. And the student must be shown how to conduct his explorations, and that the means for doing it are to be provided by the largest library that is within his reach. He must be shown the nature and uses of the books which he does not use in school or college, but which he must use if he is to do any kind of intellectual work in the world. He must be taught how to get the utmost possible advantage from whatever collection of books he may have access to. He must be brought to feel that he is at present pursuing certain studies under skillful guidance at school simply that he may know how, after a time, to dispense with such guidance, and to continue such pursuit when the vocal guides of his school-days shall have been replaced by the mute guides upon which he must henceforth rely.

But this is all visionary, it is said. Perhaps it is. Men who have high ideals do not expect to attain them, yet they believe that their success will be proportioned to their ideals, and that it is better to fall short of a high one than to attain a low one.

"Not failure, but low aim, is crime."

But this education, being based on an unattainable ideal, is not practical. Ulysses would have passed for an eminently practical man among the Greeks; let us see how a great English poet has conceived of him in his old age, after a long, eventful, practical life; what we may learn from

"this gray spirit yearning in desire
To follow knowledge, like a sinking star,
Beyond the utmost bound of human thought."

There is a profound significance in the utterance of one who, in extremest age, has for us these words as his last and best:

"Yet all experience is an arch wherethrough
Gleams that untraveled world whose margin fades
Forever and forever, when I move."

THE ELEMENTS OF GROWTH IN SCHOOL-LIFE.

BY GEORGE HOWLAND, A M.

It has not been my purpose, in the preparation of this paper, to deduce any new theory, or to evolve a philosophy of education; but rather from the fields of experience and observation to gather together a few thoughts and suggestions which might be of use in the schools.

That memory should have played so prominent a part in our school-life is not to be wondered at, as it is, perhaps, the most important and mysterious of our mental faculties;—the one faculty that makes all the others of any worth, binding by its infinite attractions the separate atoms of existence into one glorious whole, affording the possibility of a reasonable, intelligent life. Nor can the value of its marvelous powers be over-estimated, nor too careful heed be given to its proper training and development. It is only the misapplication of its forces that is sometimes deplored, when, instead of acting as an all-pervading gravitation, molding the bright family of worlds, and holding planets and suns in their harmonious circles, it would supplant the living principles of growth and progress, dragging the unvitalized star-dust of the mental universe down to a shapeless chaos of darkness and death.

The first conscious act of the child's wakening intelligence is to observe, — to see, to hear, to touch. How vague and shadowy the procession that passes over his tender sensorium! And yet these sensations are to be the alphabet by which the world and its occupants are to be revealed to him; his reasonings and conclusions thereon shall constitute his wisdom; and the conduct to which they shall lead him, be the determination of his usefulness and the condition of his happiness.

To observe, to think, to do, — the three elements of all progress, without whose perfect blending all education must be sadly deficient and incomplete, and our best efforts illusory and ineffective,—in what sweet accord they unite during the early years, when the young being is adjusting itself to its new surroundings, and getting its powers of body and mind well in hand for the outreaching life; and how ready the reward to his ever-delightsome efforts! With no motive but his own natural desires, no guidance save their speediest gratification, his advance, both in knowledge and power, might well put to the blush the maturer guardians of his later life. And if, upon his entering school, we are to be of service in leading him by wiser ways, it will be, not by checking his childish curiosity, but by giving it a surer direction; not in quenching any one of his desires, but in pointing to higher gratifications; not by diminishing his happiness, but by helping him to make it more perfect and enduring; not by calling a halt to his new-born powers, but by directing him how he may observe more accurately, think more clearly, and act more efficiently, become more wisely.

But by the most earnest and best-directed efforts little would be gained, and we should all be but savages at the last, should we depend solely upon ourselves,—could we not, on stepping-stones of the dead past, availing ourselves of the world's wisdom, already won, rise thereon to greater heights. And where but to the written, the printed volume, shall we turn for the best and fullest records, or where else make faithful minute of our own successes and failures? Language,—reading and writing,—is the key that shall unlock the treasures of the past, and in the mastery of this will be found the chief employment of the early school-life.

But language is the expression of thought, and without this the ready calling of words is of no more worth than the twitter and chirping of birds, and from the first the two should always be associated, — the thought suggesting the word, the word the thought, forever inseparable. But till the mind has somewhat furnished itself with ideas, hanging its walls with pictures, and storing its secret cells with abstractions for study and contemplation, the thought must come as a suggestion of the senses, those silent but watchful messengers waiting ever upon our waking hours to minister to our needs and pleasures, and make report of aught that may concern our welfare. Readiest to our hand comes the visible object, — the hat, the book, the man; then the easily recognized representation, the picture, followed in due time by the arbitrary sign, the word, the name. Even now, too, may the interest of the pupil be quickened by letting the pupil tell, in simple, easy word and sentence, what he has already learned, and leading him on to discover something as yet unknown to him,—his little errors of speech by use set right the strangeness of the school-room and the unwonted sound of his own voice there made sweetly familiar, and his foreign lip soon beginning to curve in loyal lines.

Now may he, by easy, quick transition, try to make, himself, the words; or, perchance, essay with unskilled hand his first attempt at art in the little picture of the hat, the book, the man. Soon will the apparent love and gentle sympathy of the teacher begin to be reflected in his own confiding face and glistening eye. There must be ever the thing to suggest the thought, the thought expressing itself in words, the word fitly framed in the sentence, and made visible on the slate or page, and the sentence woven so as to produce mental pictures, like the changing kaleidoscope, ever fresh and new; thought again suggesting thought, making study an inspiration and labor a delight.

At every step of his progress, even to make progress possible, there must be something new, some new arrangement of old material, something for the pupil to handle, examine, to find out for himself; something for him to think, to reason about; something to devise, to invent, to do; some desirable purpose to accomplish. The very effort, which might otherwise be but the essence of drudgery and dullness, may, with a due motive presented, awakening his childish spirit, become like the glad motion of a new life. It is but the dead-sea fruit of a perished and bitter past, the thought that labor, that work, is and must be irksome. In the ardor of conflict the soldier is not conscious of the wounds he receives, nor any more does the student think of the toil in view of the end to be attained. It is the aimless, fruitless, compelled toil that burdens and degrades, against which the free heart rebels, and which the weary drudge seeks to shirk.

The motive may be a fortune to be won, a future home, or empty fame; or, for the little ones, more valued still, and more efficient, a pleasant look of recognition, a kindly word, a well-earned commendation, or even the consciousness of successful accomplishment. If for one taste of the tree of knowledge our parent's threw Paradise away, surely for the banquet to which the wise teacher leads, these little ones will gladly seek it again. Toil for the sake of toil is not labor, nor suffering for the sake of suffering, martyrdom; and subjection to unworthy imposition is not a desirable or useful discipline.

When the pupil has advanced, as he will have done, perhaps, by the end of the first term, so as profitably to use the book in reading, a new and fruitful field opens before him. The words that he has already learned stand out bright and clear, but in a different order, to tell him tales of new interest. Not now does the teacher need to stand over them, one by one, pointing with pencil or finger at the unmeaning words, while the rest of the class are gazing listlessly around, or covertly working out their roguish devices; but as they already had gathered before the chart, or blackboard, so can they now take their places, an interested class, pleased to apprehend the thoughts expressed in the well-known characters. They have the material prepared, so that instead of blundering blindly and hopelessly over the darksome way, they find the little mental pictures following in pleasing variety before their minds, as they compass line after line.

In telling of what they have read, they have no longer the trouble of repeating the precise words as read, for the familiar image is before them, and with an ever-increasing and more clearly-defined vocabulary, and more correct idiom, can they reproduce the story, as they would describe an object or a picture, presented to the eye. Now, too, they may be led to make their own little stories, or give descriptions of what they have seen ; by nicer perception, to discern new qualities, or uses of articles in the room or at home, and ere long place them in visible form on their slates, converting their little talks into veritable compositions.

That old bugbear of composition will soon disappear when we understand that it is simply putting upon paper what we have made familiar by discussion, or study, or perhaps what we have already said. Like that pointing with pencil or finger, to which I alluded, many of the faults which we find it so difficult to remedy in after-days and years are faults into which we ourselves have led them by our early methods, or want of method.

This clear perception of the thought is the basis of all their mental life. In the neglect of this lies the lack of expression in reading, so often noticeable not only in the lower, but the higher grades, and sometimes in candidates for a teacher's certificate. There is no expression, because there is nothing to express. It is a mere calling of empty words and barren sentences. It is often a physical rather than a mental act, and even in that respect is little better than a failure ; for the absence of thought has left uncalled for the clearer, distinct enunciation, the nicer inflections and shadings of meaning, which demand skill in the use of the organs of speech. Such an exercise dulls the perceptions, deadens the sensibilities, and dwarfs the reason, and returns the pupil to his seat a more inattentive, weaker, and stupider scholar than before.

Nor does the evil end here. It has made the next lesson more difficult. What the pupil might have accomplished with profit and delight, had the previous lesson been clearly understood, finding but an added inspiration, from his very habit of success, in the little hindrances in his path, now appear an insurmountable obstacle, from which his indolent nature shrinks unabashed. Nor yet have we exhausted the evil. Like all physical and moral decay, it spreads and perpetuates itself. Over the enchanting pages of history, or biography, from which with a thrill of joyous exultation he should be able to extract the worth by a single perusal, he stumbles and blunders wearily and uninformed. And if, as in the last struggles of expiring hope he essays with convulsive energy the task with contracted brow, and clutching his hair,—you have seen him study,—he begins: "That night leaving his camp-fires,"—"That night leaving his camp-fires,"—"That night leaving his camp-fires";—"burning to deceive the enemy,"—"burning to deceive the enemy,"—"burning to deceive the enemy";—"he swept by country roads,"—"he swept by country roads,"—"he swept by country roads";—"round the British,"—"round the British,"—"round the British." Words! words!! words!!! Ask him now of Washington's attack on Princeton. You can guess at the result. He has no idea that reading is study.

This perfect union, this blending of the word with the thought, the sign with the thing signified, at the beginning, does not come from dictionary, but from use. It must, from its very nature, be essentially accomplished before grammar or dictionary can be of any avail. And there can be no greater bar to success, no more deadly foe to real progress, than too early reliance upon either of them. A little book recently republished, written by a young Portuguese, is a good illustration of dictionary-learning, equaled only by some specimens from our own schools. The foundation must be securely laid in the familiar conversation, the examination and comparison, the question and answer, as the child has already so successfully begun to do in the home and on the street. It is astonishing how seldom the little Arab of the street,—or the little cherub of the home, for that,—ever misapplies a slang word or phrase.

And when he can read with some facility, then should come the supplementary book, or little pages, which he has not already learned by rote from listening to his elder brothers or the more advanced classes; something which has the same words employed in other relations, and with different shades of meaning. Not by reading and re-reading the same extract over and over again, till it can be said backwards or forwards, or either side up with equal ease, nor by the long rhetorical drill, does the pupil learn to read. Not by telling him to give this or that inflection or emphasis, or by parroting such and such tones, does he compass it. Find what he means by his reading: why does he read so and so? With his own understanding, when he has any at all, he may be right, and, if properly taught, will rarely be in the wrong. however he may differ from you and me. The prattling tyrants of the household do not often err in inflection, emphasis, or intonation. When the word, by use and practice, has become itself an embodied thought, then we can pass from the concrete and imperfect to the abstract and the ideal. Then may we claim companionship with the wise and great of the world, and sit at the banquet of the sages, furnished from all ages and every clime with the science, the wisdom, the wit, and the poetry of which we can now be the appreciative partakers Then, leaving the paths of error into which their feet unwittingly strayed, and carefully shunning the false lights that lured them on to danger and doubt, may we with safety and assured success direct our course toward the abode of a wise and noble humanity.

The word, spoken and written, as the expression. the embodiment of thought, is the vitalizing element of all civilization and enlightenment, making each of us the sum of all, rendering each onward step secure, and furnishing in its records the foundation for further progress. In the beginning of all advancement, with its creation and preserving power, is the word, and without the word there is no accurate, true thought.

Number, too,—the motive and the measure of all material progress, and the explanation of so many phenomena,—must be included in all true education. A happy day for society, as well as for the deserving teacher, will it be when the mentometer shall be devised of such delicate construction as to enable us to record, and present to the public eye, the quantity and quality of mental and moral growth and development,—when our record-books can be read as readily as their ledgers.

Nor will the value of the study of numbers be lessened when we shall rid ourselves of the old-time error, that it is the true test of mental power,—that he who is good in figures is good in everything. By trying to secure too much, we may lose our hold upon the true benefits to be derived. There are mathematicians and mathematicians; some of sound judgment and clear intellect have I met, and some numerical cranks. In pure mathematics we reason from definitions, certain and unvarying, which, in the real world, in the contact of mind with mind, we never have, but deal largely with probabilities and presumed motives, where success depends largely upon knowledge of character, of men, and upon skill in forecasting results.

Not only facility in the use of numbers, but clear perception and sound judgment in obtaining correct data, and prompt, decisive, and skillful action, are needed in the affairs of life. Though mathematical has little in common with moral reasoning, yet the mathematical sense, — skill in the applications of number, — is important alike to the banker and the artist, the astronomer and the poet, the musician and the housekeeper. Here, too, should the child's early, his natural method be regarded. We should seek, not to obstruct and dam the sparkling current of the child-nature, producing but a stagnant marsh, or at best a dull canal, but to guide it in gradually deepening channels by a better way, through greener meadows and more flowery fields,—not where it will be held barred and bound as by icy fetters, but with the sunlight playing upon its surface, making sweet music of its rippling murmurs, ere yet it learns with calmer flow to bear the burdens of the merchandise and navies of the world.

To observe, to think, to do, in sweet succession till almost blended into one, are still the threads of that golden cord by which the pupil is guided through the mazes of ignorance to the light of intelligent life. Pleased with the rattle of the nursery, tickled perchance with the kindergarten straws, with pleased fancy he comes now to the blocks, the buttons, the cards of the school-room. He takes them, he handles them, he counts them, — combines, piles, takes down, separates, and arranges, — learning his ones, his twos, and threes by short and progressive steps. He learns, too, their names, and, in due time, the signs, the figures, and how to make them, till they become as familiar as his own face in the glass, and he has no more need to count them than to count his eyes or his ears. He may, perchance, vary his slate-work by little circles and triangles and squares, getting not only his addition, subtraction, and multiplication, but the alphabet of his geometry, too, before he knows that there is such a science as either. Nor would it be amiss, sometimes, to deck his slate with his attempts at men and dogs and birds, singly or in company, taking on drawing, also, as one of his unconscious arts. What squads and companies of those rude slate-soldiers have I drawn, and drilled, and slaughtered, while sitting upon that board-bench in the old, country school-house beneath the hill, when I was thought to be bowing devoutly over my sums!

When this first year's work has been now well digested and assimilated, and become as much a part of his mental nature as his last year's dinner has of his physical, how naturally falls in that short-hand way of crowning the tens by putting them in the second place, in the king-row, as it were, the only royal way of learning! How these regal tens may lead their humble units during the second year of assimilation and growth! Little use have we here for those long lines and towering columns of figures, as much beyond and above the pupil's mental as his physical grasp. And why waste much time or strength at all on numbers higher than millions? *They* meet all the requirements of ninety-nine in a hundred of our busy men, except in speaking of the national debt, and the naming of that conveys no meaning or impression save a general sense of greatness and vagueness. What opportunities here, as we advance, to tempt the new-fledged souls to a trial of their powers!—to give them a chance themselves to observe, to think, to do!

If the old district school, whose glories are sung about as often and long as those of our mothers' pies, had any superior merit, it surely was not in its methods of instruction, but in letting us alone to do our sums at our own sweet will. Yet, in recalling those glad days, we all forget the old rhymes,—

> " Multiplication is vexation;
> Division is as bad;
> The rule of three doth puzzle me,
> And fractions make me mad."

Not all happiness and courtesy even then, as is attested by the usual last-day parting refrain,—

> " Good-bye, scholars; good-bye, school;
> Good-bye, master, and you're an old fool."

But we may well imitate more often the old way of letting the pupils do for themselves. Rainy days are the days for fishing; and why not, after one of those bright "apple showers" of the later autumn, cut a few of those apples into halves and quarters? A boy can count the number of halves as easily as that of the wholes, and perhaps he may devise a way of writing to designate the halves and quarters. None but very young parents name the child before his birth. Without rule or direction let him find out how many square inches in one face of his slate,—perhaps by marking it off as a checker-board, and counting the squares; or, may be, by a higher flight, counting the rows and the number in a row; the duller ones aided, perhaps, by asking them how many panes in a window. Let him compute how many yards of plain carpeting will cover the platform, or the floor, making his own measurements; how many of figured carpeting. He who succeeds will need to learn no rule; he has already learned in the doing, and in a manner that shall remain. Let him draw the diagonal, dividing into two equal parts, and by a little observation and thought he has more of the triangle than is usually obtained from that old, confusing demonstration in the geometry. Do something to quicken his dull nature,—or, rather, to guide his restless, eager, longing nature into a thoughtful, persistent, and useful channel, and get rid of that everlasting, never-ending working of identical problems under some given rule,—that burden and bane of so many school-rooms.

Of course the whole country is not yet subdued and possessed, but following this pioneer work, under skillful guidance, comes the steady tramp of the trained battalions, with ordnance and camp equipage, with stout hearts and strong arms, resistless, instead of becoming entangled in impenetrable jungles, and mired in the morasses of the wilderness,—their supply-wagons converted into an ambulance train for the sick and disabled, the tattered banners of the surviving few, if victorious at last,raised by feeble hands over a hospital of invalids.

Especially is geography open to this intelligent work, affording opportunity for careful observation, from which is derived rich food for thought and reflection, leading to useful and educating action. In the school-room itself, with its rows of desks; the building, with its halls and rooms to be measured and plotted; the adjoining streets, their width, and the length of the blocks; the presentation of the district on the slate or the vertical blackboard, may be found the most important elements of the study. By the use of the sphere the cause of day and night may be easily comprehended; but not yet the seasons, with the long days of summer and the long nights of winter. Knowing the circumference of the earth, and its revolution in twenty-four hours, the pupil may himself determine how much passes under the sun in an hour or minute; and the difference in time between here and New York, or San Francisco, and perhaps why the equator and its parallels and the meridians were devised. Possibly the county with its towns in outline would not be amiss, and the State with chief features and towns. The crayon should be as familiar to his hand as the musket to the soldier's.

Let him see how rivers are made, like the Mississippi and its majestic confluent, and the broad delta at its mouth. In the higher grade, when he shall read in *Evangeline*, for instance, "How the mighty father of waters seizes the hills in his hands, and drags them down to the ocean," he will see the difference between the scientist and the poet; or, perhaps, how the poet must be himself a man of science; nay, rather a painter, a philosopher, a moralist, a linguist, as well, often seeing things beyond the scientist's ken,—evolving systems and deducing lessons of which he never dreamed. What vistas of delight might open before the pupil at every step, his only sorrow being that the time was so short!

The motive, the prime purpose of the public school, as may be seen from its origin and history, is intellectual culture; and a sad day for the people, as well as for the schools, would it be if this purpose should be essentially changed, and they primarily devoted to the training of the laboring classes for their several vocations. From this intellectual culture the ingenuity and versatility of the American workman have become almost proverbial. He may not be, in some departments, so perfect a machine, but he is more of a thinking man. Half a century ago, when the bulk of the population were farmers and mechanics, and their children were in the district school for three months in the summer and three in the winter till twelve or fourteen years of age, following with a term or two at the academy or select school, their studies interspersed with the various labors and sports of the farm and the home, there was no thought, or need of aught else. For the professional few there was the college, affording a little more Latin and Greek, but much less of science, than the present high school. But the decided and rapid determination within the last twenty years, especially, of the young blood of the country to the large towns and cities, those centres of modern life, has changed the conditions, and with all our talk of the new education, it would not be strange if we should seem to lag behind the marvelous movement of our civilization ; if, in short, as to meeting the requirements of the times, the old district school should be found fully in line with the schools of to-day, with all their improvements. The merits of the district school were little, but the demands were less, while ideal perfection would be counted among the short-comings of to-day. It is not in any lack of sympathy with the activities of the hour that we are in fault. The tendency to business is but too strong already, but largely to those branches that are commercial and speculative instead of to the farm and the workshop.

The frenzied cries and shoutings of the exchange deafen the ears of our youth to the calmer "call of incense-breathing morn," and the jargon and clamor of court and forum drown the busy hum of honest industry. Mere physical labor the children of our schools and our age may properly disdain, as the lot of the ignorant and the unfortunate. But with the active brain we need to ally the discerning eye and the skillful hand, and to our acquaintance with books to add the knowledge of things. We must seek to furnish to our pupils something of that which the field and the forest, the garden and the workshop, supply to his brother in the country.

The three learned professions of our fathers no longer monopolize the trained intellect of to-day; and in the ability to perceive, to think, to do, many a one whose academic escutcheon is all covered over with the heraldic devices, "This certifies," "This certifies," and

"This certifies," must give place to his unlaureate neighbor. Aside from the field of mechanical invention and skill, the upheaval, as it were, of society in the line of decorative art, — we can hardly call it yet a development,—is opening many new channels of mental and manual activity. For all of these a correct training in drawing and design is the first requisite; nor is there, in fact, any department of business or professional life where its want is not felt. The use of the pencil can be as readily learned as that of the pen, and might well be as universal.

But as the child can be pleased with the little, simply-told tale ere yet it knows a word or a letter; as in reading there should be some careful study of words, united with their ready and discriminating use, — their only worth, — so should the elementary lines and curves be interspersed with some picture-making, some attempts at shading and design. A fairly-proportioned figure and a meritorious design may be accomplished long before the perfect straight line can be achieved. What kind of industrial training could or should be made a part of our curriculum? is the question of the day, but not the purpose of this paper. One enthusiast is partially successful in this, and another in that; but just what shall finally take its place alongside of the Reader and Arithmetic, still waits the successful wooer. But however this may be, we should seek by some means,—a few of which it has been my purpose briefly to suggest,—to cultivate in our pupils a quicker and more accurate perception; a clearer and closer logic; a sounder judgment; a nicer and truer taste; a wiser forecast, and more skillful adaptation of means to ends; how better to observe, to think, to do; to show him that, whatever his advantages, the true man is always a self-made man; that the highest acquisition is the full possession of all his powers of body and mind; and in a free land the only wise ruler, he who can control all those powers, and direct them to high and noble ends.

SCHOOL EXERCISES IN PUBLIC SCHOOLS,

INCLUDING SESSIONS, INTERMISSIONS BETWEEN SESSIONS, RECESSES, PHYSICAL EXERCISES, AND LENGTH OF RECITATIONS.

A REPORT TO THE COUNCIL OF EDUCATION.

STATISTICS COLLECTED FROM 27 CITIES.

Your committee has collated special statistics from twenty-seven prominent cities, which may be considered fairly representative in the condition of their schools. The following is a summary of the statistics:

I. SESSIONS: The schools in all the cities provide two sessions daily for some grades, if not for all. Pupils in the high school have only one session daily in thirty-seven per cent. of the cities. The lowest grades have only one session in less than ten per cent. of the cities.

a. Advantages of the practice in schools which have two sessions daily for all grades.

The advantages which are assigned to this practice by superintendents include the following: None; gives opportunity to go out at the proper time; gives time for recreation; dinner with parents; rest; exercise; health; better opportunities for study; no interference with family arrangements for meals; rest for pupil and teacher; suits patrons; keeps children out of mischief; easier for pupils to do work; long-needed rest; school is for the child, not the child for the school.

b. Disadvantages attending the practice in the same schools.

Superintendents say: As much accomplished in one as in two sessions; time none too short to go home,—too long to play about the school-grounds; pupils subject to exposure; gives too much opportunity for absence during the latter part of the day.

a. Advantages of the practice in schools where pupils in the high school have only one session daily.

Superintendents say: Pupils have to come a long distance; works well; it suits the habits of the people; time to rest; convenience of parents and pupils.

b. There are no particular disadvantages specified.

II. LENGTH OF INTERMISSION AT NOON: The noon recess varies in length from one hour to two and one-fourth hours; the average is about one hour and three-fourths of an hour.

III. RECESSES: Nearly thirty per cent. of the schools have daily, in all grades, two recesses, — one in the forenoon and one in the afternoon. About twenty per cent. have one out-door recess daily in all grades; these schools have usually one or two in-door recesses, when pupils take physical exercise for a brief period. Nearly twenty per cent. have no out-door recess; pupils in these schools have brief rests during the sessions. The balance of the schools have practices that vary as follows: One in the high school, two in the other grades; two in higher departments, three in primary; none except in primary; two in primary, one in higher grades; only for small children.

The statements of superintendents where no recess out-of-doors is allowed contain the following remarks: Fewer cases of discipline, fewer colds, session unbroken, thoughts not distracted, no opportunity for moral contamination; escape colds, discipline easier; less danger in rough play, earlier dismissal; unless good judgment is used, physical injury from close rooms and too long confinement; no recess is a decided improvement on the mechanics of school-keeping, but it hangs one more mill-stone about the neck of the little ones who are called to go through the trying ordeal of what is called the best modern school-education.

Where two out-door recesses prevail daily, superintendents say: Change the air in the room by raising windows; discipline of contact with each other, healthy exercise, development of American youth; exposure, evil contamination, general disturbance; parents desire the plan; healthful exercise; disturb school less than leaving room at all times.

Where one out-door recess prevails, the remarks are somewhat similar to those just cited under two recesses.

IV. PHYSICAL EXERCISES: About fifty per cent. of the cities have physical exercises in the schools. The rest have the exercises in portions of the grades, more particularly in the lower grades. The superintendents say of these exercises: Usual advantages and disadvantages; health; great advantage if well conducted, otherwise none; no disadvantages; play is a different thing from exercising by rule; want of room, proper accommodations and properly prepared teachers; dust is raised in the room by the exercise; take the place of out-door exercises, likely to become formal, therefore valueless; pupils go to work more vigorously, teachers are annoyed by so many interruptions; take the place of general exercises, air changed in the room; rest and physical culture; advantage to mind and body too numerous to dwell upon; creates good spirit among sluggish children, promotes manly bearing and personal pride; improves general carriage and appearance; change for pupils and teachers.

V. RECITATIONS: The recitations vary in length from ten minutes to one hour; a large majority of the cities give from fifteen minutes to forty-five minutes. The school-day varies from four and a half hours to five and a half hours, depending upon grades.

Superintendents say in regard to the length of recitations: Determined by subject and age of pupil; arrangements of hours left wholly to principals; to give time for study, and to rest the attention; mainly to conform to the ability of pupils to give attention; fifteen minutes in primary, because attention cannot be held; forty-five minutes in the high school, because subjects demand it; forty-five minutes are fifteen minutes too long; takes up the school-hours; thirty to forty minutes keep pupils as busy as they should be kept, and give all subjects a fair chance; to give change and variety to the little ones.

DISCUSSION: These statistics are valuable for what they contain and for what they suggest. They contain reasons in profuse variety; here are wants of parents; convenience of pupils; capacity of pupils; opinions of teachers; health; discipline rendered more easy to administer; American manhood; rest to pupils; moral contamination; physical development; dust; and rest for the teacher. The statistics suggest very plainly that no well-defined educational idea controls school-exercises; they reveal an educational evolution that belongs to the empirical stage; they indicate an adventurous spirit which seeks improvement; they show a commendable activity among school-managers.

A basis for attempting to establish the character, number, and length of school-exercises can be found in the utilitarian conception of work. What shall be the divisions of the day in order that pupils shall be able to accomplish daily a maximum amount of curriculum work? The question involves the notion of productive labor, mental and physical. Productive labor means endurance, patience, persistency, health, and mental vigor. Other things being equal, that pupil will perform the greatest amount of labor who endures longest an unfaltering application with the least fatigue. To endure indicates power, and power is increased under habit. Hence school-exercises should recognize the idea of habit as it is related to work; they should incorporate the notion that the child must acquire the habit of work. Habit can be acquired only by routine; routine to develop power implies a minimum of variety in exercises rather than a maximum. The general tendency among schools is clearly to lessen the number of hours which constitute a school-day. There is a tendency, also, to increase the number of subjects in the courses of study which pupils must master in order to pass from grade to grade. These two conditions, acting in opposite directions, introduce into school an undue pressure upon pupils and teachers; both feel hurried at all times, and hence school-work is carried on under extreme stimulus and excitement; this state throws all parties into nervousness; this condition affects the health of all, and hence retards intellectual progress. School-room work must be performed under no undue excitement, if pupils are to acquire permanent habits of power to do the tasks which are set to them in school and in the whirl of the busy world into which they will come soon.

It would seem to follow, therefore, that school-exercises should be governed by the following general principles: (1) That the tasks set to pupils should not involve daily too great a variety of exercises, and the exercises should be reasonably brief; for habits of attention and power to work are acquired most rapidly by exercises which purpose a concentration of energy. (2) That pupils should be kept calm, at ease, free from nervous excitement, in order that they may develop a maximum power of application and of endurance; for when pupils are under no waste-energy they require less time to rest and recuperate their powers. (3) That pupils should be afforded stated opportunities to attend to the condition and necessities of the physical system, in order that they may not be under the embarrassments of obtaining special permissions, and also because regular opportunities tend to induce regular habits in the physical system.

Further: Physical exercises that are taken expressly to rest the tension of mental application must be taken spontaneously, — *i. e.*, without taxing consciously the mental or physical energies. Physical exercises, performed under the tension of regular drill, are a change from study, but they are not a relief to conscious expenditure of volitional force. A man might as well put immediately his horse into bits to speed a skeleton wagon over the course in order to rest him from the weariness of drawing the plow, as to put pupils into vigorous physical drill under the restraints of order and attention, when they are to be rested from mental application. The bitting of the horse and the calisthenic drill of the pupils are valuable for specific purposes; but they are severe business, not play. Play is exercise that is performed upon a minimum of conscious attention. Drill in physical exercises requires from pupils and teachers an expenditure of volitional energy that is a tax upon mental and physical power. Pupils who thrive under both study and drill in physical exercises exhibit the integrity of their constitutional powers; they demonstrate their capacity to work; they can pursue successfully more than one subject daily. These facts indicate the province of physical exercises; they belong to the general conception of work with which this discussion began.

CONCLUSION.—The nature of the case, as it is revealed by the preceding statistics and investigation, indicates the following general conclusions:

(1) School-exercises belong to the general province of work. They should purpose to develop the maximum power of pupils to accomplish work.

(2) Intermissions at noon, and recesses during the sessions of the school-day, are periods to give rest to pupils. Saturdays, Sundays, holidays, and vacations belong to the same periods. Pupils rest and recuperate during these periods.

(3) Study in school and out of school, recitations, and physical exercises tax volitional energies; they are sources of expenditure of power.

(4) Habits of doing daily and of enduring permanently maximum quantities of work are induced by quiet application during an extension of time, rather than by excitement, variety, and brevity in the length of the school-day.

(5) The health of pupils is conserved by absence of undue excitement, by regularity of application to study, by regularity of opportunity to go out, and by combining judiciously periods of application and of rest.

J. H HOOSE,
Member of Com. on Physical Education.

INTERNATIONAL ILLITERACY.

While deeply interested in discussing the illiteracy of our own country, it may be of profit to examine some of the facts concerning this vital topic abroad. *The Boston Advertiser* of last week says that the latest Austrian census throws some light on the illiteracy of the cis-Leithan monarchy; but no country in Europe attends to this topic as does our census. From an abstract, it appears that out of every one hundred male adults in Austria, excluding Hungary, but 56.8 per cent. can read or write. This goes below the standard of South Carolina and Alabama, where the census shows nearly one-half of all persons over ten years old as unable to read, while one-half could not write. In the Bukovina, which is inhabited chiefly by Ruthenian Slavs and Latin Roumanians, but 13 per cent. of the adult males could read or write; of one hundred children having the legal school-age, but thirty-six nominally attended school; of one thousand inhabitants, but ten had deposits in savings banks; and the average deposits per head were a trifle above two dollars. In Dalmatia, which is inhabited by Servians, the savings record is even worse. Carinthia presents the average of illiteracy and savings in the Austrian monarchy. It is inhabited chiefly by Germans, while Bohemia, mainly a Slav country, is very far above the average, and is one of the best appointed provinces in all Europe.

It will not do, therefore, to charge illiteracy and lack of thrift to national characteristics, or to religion. Some of the most prosperous countries and districts in Europe are Roman Catholic in religion,—at least, nominally. But in Austria illiteracy and lack of thrift go together, as they do in this country, and probably also in England, where information on illiteracy is very imperfect, except that illiteracy among the laborers is a matter of notoriety. In 1877, the Registrar-general of England and Wales concluded, if schools would increase in the future as they had since the elementary-education act of 1870, and from 1841 to 1875, that in the year 1915 all Englishmen, and in 1908 all English women, would be able to write their names. In 1877, 17 per cent. of the men and 23 per cent. of the women signed the marriage-registers with "marks," and Staffordshire, Suffolk, and Norfolk presented a specially bad record.

That there is relatively less illiteracy in this country than in England and Wales is fairly certain, although our census reports 13.4 per cent. of our population above ten years of age as unable to read. We are superior also to France, where about 10 per cent. can read only, while 50 per cent. can read and write, and the remainder of about 40 per cent. is illiterate. Germany certainly, and Scotland probably, present a better record than ours; so do the Scandinavian countries, Belgium, Holland, Switzerland. But with these rather trifling exceptions, Europe surpasses our record of illiteracy, and we have a smaller percentage of illiterates than has Europe.

EDITORIAL NOTES.

LORD CHIEF-JUSTICE COLERIDGE, on the eve of his departure for England, gives excellent testimony to the value of the classics, and replies most conclusively, to Mr. Adams' address on the "College Fetich." Lord Coleridge is reported as saying, at New Haven: "I learned to-day, for the first time, that a very distinguished man in another part of the United States has committed himself to an attack upon the classical curriculum, and has rather suggested that it has interfered with possible success in professional life. Now, without any desire or purpose of entering into a controversy, but merely to repeat here what I have said in public, over and over again, in my own country, I venture to say to you as a lawyer, with some practice, as a Judge of some position, and as a public man of some experience, that which I have said there. I have done many foolish things in my life, and wasted many hours of precious time; but one thing I have done which I would do over again, and the hours I spent at it are the hours which I have spent most profitably, and the knowledge I have thus gained I have found the most useful and practically useful. From the time I left Oxford I have made it a religion, so far as I could, never to let a day pass without reading some Latin and Greek; and I can tell you that, so far as my course may be a successful one, I deliberately assert, maintain, and believe that what little success has been granted me in life has been materially aided by the constant study of the classics, which it has been my delight and privilege all my life to persevere in. This is not said for the sake of controversy; still less is it said to an audience of American University young men for the purpose of appearing eccentric; but it is said because I believe it to be true, and I will tell you why. Statement, thought, arrangement, however men may struggle against them, have an influence upon them, and public men, however they may dislike it, are forced to admit that, conditions being equal, the man who can state anything best, who can pursue argument more closely, who can give the richest and most felicitous illustrations, and who can command some kind of beauty of diction, will have the advantage over his contemporaries; and if at the bar or in the Senate anything has been done which has been conspicuously better than the work of other men, it has, in almost every case, been the result of high education. I say high education,—not necessarily classical, because every man cannot have that. The greatest orator of my country at this moment, as he himself has often said, has 'only a smack of it.' But he takes no credit to himself for that. On the contrary, he declares it like a man and honestly, and he has striven to make up for what he has lost, and what he cannot learn, because he is so advanced in age, by doing the next best thing to studying classics, studying the best, the highest, and the finest writers in the English language. And so it is in my judgment in almost every case that I can think of. The man who has influenced his contemporaries the most is, generally speaking, the man of highest education, and I do not hesitate to say that the highest education, if you can get it, is the education to be found in those magnificent writers who, as writers, as masters of style, as conveyers of thought, have never been equaled in the world."

A LATE number of the *Nation* gives an able resumé of Prof. Lankester's interesting paper before the British Association, on Sept. 20. The Professor's essay contains a great deal of interesting information regarding the present state of scientific research at German, French, and English universities. It advocates the claim of biological science in England to a far greater measure of support than it receives at present from the public funds. The condition of biological research is far below that of France and Germany, and even Holland, Belgium, Italy, and Prussia, and is discreditable to England in proportion as she is richer than other States. "We know," he continues, "that knowledge is languishing, and able men are drawn off from scientific research into other careers; that important discoveries are approached and their final grasp relinquished; that great men depart and leave no disciples or successors, simply for want of that which is largely given in other countries, of that which is most abundant in this country, and is so lavishly expended on armies and navies, on the development of commercial resources, on a hundred injurious or meaningless charities, — viz., money." He lays down the general proposition that scientific discovery has only been made by those whose time could be devoted to it, (1) in virtue of their possessing inherited fortunes; or (2) in virtue of their possessing a stipend or endowment especially assigned to them for that purpose. It is to German sources that the zoölogist, the botanist, the physiologist, and the anthropologist look for new information. It is in German laboratories that discoveries, each small in itself, but leading up to great conclusions, are dailymade. "To a very large extent the business of those who are occupied with teaching or supplying biological science in this country consists in making known what has been done in German laboratories. Our English students flock to Germany to learn the methods of scientific research; and to such a state of weakness is English science reduced for want of proper nurture and support that, even on some of the rare occasions when a capable investigator of biological problems has been required for the public service, it has been necessary to obtain the assistance of a foreigner trained in the laboratories of Germany"

Germany, he continues, with a population of 45,000,000, has 21 universities, and about 80 more institutes, at which biological discoveries are prosecuted under the most favorable conditions. England, with 25,000,000 inhabitants, has only four universities which possess endowments and professoriates,—Oxford, Cambridge, Durham, and the Victoria (Owens College), at all of which, as well as at the London colleges, there is an extraordinary small amount of provision for biological research. In proportion to its population, England has only one-fourth of Germany's provision for the advancement of biological science, — 38 instructorships as against 300 in Germany; and while Germany spends $4,000,000 a year on her universities, the £27,000 spent on the Nottingham College of Science was in England regarded as something extraordinary. Professor Lankester demands, in order that England shall be approximately on a level with Germany, 40 new biological institutes, at an annual cost of £60,000. He refers to the outrageous conduct of Parliament in deliberately appropriating to other uses the property left by Sir Thomas Gresham for scientific research 250 years ago, and which is now estimated to be worth £3,000,000 sterling. Schoolmasterships are too often confounded with professorships. The best teachers, it is true, are those who have engaged in original research, and have, therefore, thoroughly grasped their subject; but time and money are necessary if the teacher is to add to the stock of knowledge.

"Those Englishmen who take an interest in the progress of science are apt to suppose that, in some way which they have never clearly understood, the pursuit of scientific truth is not only its own reward, but also a sufficient source of food, drink, and clothing. While they are interested and amused by the remarkable discoveries of scientific men, they are astonished whenever a proposal is mentioned to assign salaries to a few such persons, sufficient to enable them to live decently while devoting their time and strength to investigation. The public are becoming more and more anxious to have the opinion or report of scientific men upon matters of commercial importance, or in relation to the public health; and yet in ninety-nine cases out of a hundred they expect to have that opinion for the asking, although accustomed to pay other professional men handsomely for similar service. Such mistaken views ought to be dispelled."

A CONTEMPORARY states that Mr. Reginald Stuart Poole has attempted to trace an historical connection between the ancient Egyptian schools and library at Heliopolis, and the Alexandrian Library and University, and even the present Moslem University at Cairo. The sources of information respecting the ancient schools are chiefly old hieratic papyri, some of which were actually exercise-books of students, and they tell us of temples attached to colleges in various large towns. At Heliopolis, where were the most famous schools, religion, law, mathematics, medicine, and language were taught. Primary schools were provided for all classes, and libraries were attached to the temples. The old methods were adopted in the institutions founded at Alexandria by the Ptolemies, but, as these were intended for a mixed population of Egyptians, Greeks, and Hebrews, law and religion were excluded to avoid controversy. Learned men were maintained by the State to prosecute research, and a botanical garden and a menagerie were added. The first Alexandrian Library was burned when Julius Cæsar captured the place. The second disappeared at the time of the Arabian conquest. The niversity was restored by one of the caliphs two centuries after the conquest. The great University of Cairo, which has 5,000 students, and practically includes all the Alexandrian faculties except medicine, was founded by a Greek officer of the Fatimite caliphate, A. D. 969–970.

FOREIGN NOTES.

RUSSIA.—The *Russische Revue* gives the following statistics of the universities in Russia: As regards students, Moscow stands first with 2,430; then St. Petersburg, 2,052; Kiev, 1,475; Dorpat, 1,426; Warsaw, 1,003. Kazan, however, has the greatest number of teachers,—viz., 109; and Warsaw the largest library, 362,000 volumes; Dorpat coming next with 219,000 volumes.

SCOTLAND.—The University of Edinburgh completed 300 years of existence, Oct. 24. The celebration of the event has been postponed till next April, possibly with the hope that in anticipation of the occasion Scotchmen will be found to make up the funds required to complete the new Medical School. The sum of £200,000 has already been expended upon the buildings, of which £100,000 were voted by Parliament, and the other £100,000 subscribed by the people. The Medical School is represented to be the grandest single erection ever undertaken by a university.

ENGLAND.—The sixth annual meeting of the Library Association of the United Kingdom was held at Liverpool in September. Among the papers read and discussed was one by Mr. T. E. Stephens upon "The Rise and Growth of Public Libraries in America." The relation between the libraries and the public-school system of the United States was very clearly brought out in the paper. This is a point of special interest to the English at the present time on account of its bearing upon the projected Free Public Libraries bill, which, it is hoped, will be brought before Parliament during the next session. The number of free public libraries in England has increased from 36, where it stood in 1871, to 113.

SCHOOLS OF FORESTRY.—The number of forestry schools in each of the principal countries of Europe is reported as follows, as the result of a recent inquiry: Austria, 9; Prussia, 3; Saxony, 1; Bavaria, 1; Saxe-Weimar, 1; Prussia, 4; Italy, 1; Spain, 1; Denmark, 1; Sweden, 1. In Wurtemburg, instruction is given at the Royal Agricultural Academy at Hohenheim, and at the University of Tubingen. Baden has a forestry department. Hesse-Darmstadt has a forestry institution attached to the University Giessen. In Switzerland the department of forestry forms the fifth division of the Federal Polytechnic School at Zurich. France possesses a school of forestry at Nancy, and one of forest guards at Barres, in addition to several agricultural schools and agronomic industrial schools, in which forestry is taught.

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BY [illegible] STRAIGHT.

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EDUCATION.

No. III.—January, 1884.

THE NORMAL SCHOOL PROBLEM AND THE PROBLEM OF THE SCHOOLS.

BY H. H. STRAIGHT.

The first systematic studies ever made upon human beings with true pedagogical intent by those capable of observing and interpreting pedagogical facts, so far as we are aware, were the studies of Pereira upon deaf mutes, and those of Itard upon a savage idiot. The conclusions from these studies were: That the senses, one and all, can be subjected to physiological training by which their primordial capability may be indefinitely intellectualized; that one sense may be substituted for another as a means of comprehension and of intellectual culture; that the physiological exercise of one sense corroborates the action as well as verifies the acquisition of the others; that our most abstract ideas of the external world are derived from materials furnished by the senses; that educating the modes of perception is to prepare pabulum for the mind proper; that the problem of education is to develop the senses, the intellect, the affective functions; that the powers and faculties of the soul can only be reached through the development of a proper physical organization, which is to be the seat of their manifestations; that the entire human being is a physiological unit for purposes of education. These noble results in pedagogical science form the rich legacy which the idiot and deaf mute have bequeathed to their more gifted brethren of the human race. They teach us the solidarity of the race as well as that of the individual.

Rousseau lived in the same street with Pereira, and was a frequent visitor in his school. Says Seguin: "The *Emile* is full of experiments upon physiological teaching, which could only have originated in the school for the deaf mutes. So identical are the theories of the book with the practice of Pereira, and the first school where deaf mutes were taught to speak naturally, and the first treatise on education, whose object was to create not a subject but a man, stand side by side as the two indices on the road of modern education. Pestalozzi added no new conception to educational science, but gave a mighty impulse to ideas already born into the world. His weakness lay in his lack of scientific knowledge and practical insight; his strength, in his truly divine life for his kind. Froebel, after spending two years with Pestalozzi, concluded that our greatest educators, even Pestalozzi himself, appear too crudely, empirically, capriciously, and therefore unscientifically, to allow themselves to be led away from nature's laws; they do not appear, indeed, to recognize, honor, and cultivate the divinity of science."

Froebel's great work was to point out the true significance of a *child's play* in the education of the race; to indicate a method by which the *joy in producing*, which forms so large a part of the child's happiness, may be carried forward into the industries of mature years, deepened and ennobled by a knowledge of industrial relations; by experience of the value of industrial products, and, above all, by consciousness of duty done in the contribution made to human comfort and well-being.

According to Froebel's most faithful disciple and interpreter, the Baroness von Bulow, " We yet need minds of equal power which, rethinking Froebel's thought, shall clear up what is obscure and imperfect in his manner of expression, fill up the gaps, and furnish in an intelligible manner the commentaries necessary to carry the whole thought into execution."

The problem of the school needs restatement in such a form that, while it lays fast hold of the best thoughts and experiences of the past, it shall likewise embody the best hopes and aspirations of the present. The following is given as a provisional form of such restatement:

The human being must be considered a physiological unit for purposes of education. Soul-building means brain-building; brain-building means body-building. Every muscle and organ of the body, through appropriate exercise, must be placed in appropriate connection with the brain in order that it may become the appropriate servant of the mind. Every human being thus conceived is to be *industrially educated;* the entire work of the school must be reconstructed upon the basis of an enlarged conception of the word *industry.*

The industrial education to be thus furnished to each individual must consist of the following elements:

1. An industrial disposition which leads to a cheerful, and even happy devotion to some chosen employment.

2. Industrial knowledge, — such general and special knowledge as will put each individual in possession of the best human experience in the direction of his chosen vocation.

3. Industrial power,—such a development of physical, intellectual, and artistic power as will remove, as far as possible, the chances of failure, and by giving a just consciousness of strength, will enable each to work always with the hope and expectation of success.

Taking the best physiological knowledge the age affords under its guidance, the schools are to develop a body capable of enduring all the fatigues and strains which at least the ordinary exigencies of life are likely to bring upon it. Selecting the knowledge it is their duty to give, the schools are to impart this knowledge in accordance with the laws of mental assimilation, as discovered and interpreted by the best students of mental growth, to the end that mental dyspepsia may be avoided, and that the best intellectual conditions may exist for the quick and accurate solution of at least the ordinary problems of life.

Under the guidance of true artistic thought and feeling, the schools must develop such a sense of the beautiful as will enable our people not simply to enjoy the beautiful in the objects about them, but such as will give a *finesse* and finish to whatever work they undertake, whether it be the culture of corn, the making of a dress, the building of a house, or the painting of a picture. Every workman should have, in the largest possible degree, the fine feeling of an artist, while every artist should be recognized as a working-man. Over all this knowledge and these powers a conscience must preside that can say *might* and *might not* so loudly and distinctly that its commands cannot go unheeded. The school thus organized will be the natural outgrowth of Froebel's idea. His plays will be revised and extended beyond the kindergarten. The dramatic instinct of children will thus be utilized to make the children and youth of the public schools thoroughly familiar with the leading thoughts, of the chief industries and the general machinery of commerce and citizenship. These plays can be so varied as to give the best possible discipline in expression through voice and gesture.

The occupations of the kindergarten will be revised and extended, making the expression of thought in material form an important element throughout the whole course of the public school. The activities of infancy would thus lead to those of the kindergarten, these to the public schools, and these again to the more special activities of the technical school and university Thus nursery, kindergarten, and public school would be what they ought to be, — a road leading up the base of the mountain of industry and art, thence branching to the various heights of the special industries, each special height having at its base a special school to fit its students for its climbing. The public schools, as thus conceived, would not fit their students for any *special calling*, but would enable each student to choose intelligently the employment for which he is fitted by special taste and power. There would be laid the only possible foundation for intelligent sympathy among the different classes of workers.

The change from one occupation to another, the necessary incident of growing industries, would be greatly facilitated, and intelligent labor would come into full possession of its rich inheritance from the past. This is all to be accomplished not so much by a radical change of the subjects of school-study as by a modification of the materials used in these studies, and by making all the work illustrate and enforce certain great ideas.

It has been the narrow conception of the mission of object lessons, as well as the mechanical methods of giving them, that has made them yield such meagre results. The three R's must ever remain the fundamental studies of the school, but they must be taught not as an end, but as means, — their true place in the life and thought of the world must be shown. If no industrial training goes along with them they are apt, as Miss Nightingale observes, "to give rise to a fourth R,— of *rascaldom*."

Our normal schools and pedagogical departments must train teachers and superintendents, who, through parents' meetings, educational receptions, unions, — through press, platform, and pulpit, can arouse public sentiment, and send abroad the feeling that to train up a child in the way he should go is the noblest and most worthy work to which God can call any human being. For a man to take charge of a system of schools, make out a course of study, impose it upon a whole community, without making an honest and vigorous effort to acquaint the parents with the aims, methods, and results of the schools,—without trying in all earnestness to build into these schools the best hopes and aspirations of the entire community,—is a species of bossism as dangerous to all true progress as political bossism can possibly be.

One great need is a systematic plan for gathering pedagogical statistics, by which every intelligent parent, teacher, citizen can be converted into an observer, to gather facts to be interpreted by those most competent. This is the only way out of the anarchy at present prevailing in educational thought, and the only method by which a science of education can be built up. Men of wealth have sent expeditions to every part of the earth, have endowed schools for the exploration of every portion of the physical universe; but where is the man or the men who shall first equip a normal school, or pedagogical department in a university, with brains and means for the proper exploration of the human soul in the different stages of its development, so that teacher, minister, and parent can secure all the light that the most patient and skillful investigation can give in their work of building such men and women as the world needs?

MANUAL TRAINING.

BY PROF. C. M. WOODWARD.

"By their fruits ye shall know them. Do men gather grapes of thorns, or figs of thistles."

In a recent address before the Teachers' Association of Missouri, I attempted to show the narrowing, misleading, and deforming influence of our popular system of education. From the day when the children enter school, whether from the nursery, the door-yard, the street, or the kindergarten, they are turned into certain narrow, well-worn paths, bordered by high and well nigh impassable walls. Instead of leading out equally to all parts of the busy working-world, lying on all sides of the temple of learning, these paths conduct to a few portals through which the school-men strive to force all their graduates into the world of active life. If, forsooth, the student-traveler does not choose to enter the portals of the Law, Theology, Medicine, Teaching, or possibly Engineering, he is looked upon as one who has made his journey to no great purpose. He should have deserted the ranks long ago, and now he must needs climb over the walls and find his way as best he can into or through other fields to other gates. I protested strongly against the bad policy and the wrong of taking away from children their right of choice ; of leading them without their knowledge or consent away from half the needful occupations of men, and confining their attention to a fractional part of what is their birthright.

The walls that hem them in, I said, were built upon the broad foundations of superstition, prejudice, and pride. The walls themselves are chiefly of *books*,—books in all languages, living and dead ; towering worlds of what are to the children dead, meaningless words, which shut out the living and significant world of action, of living issues, and of material things. Who built those walls ? Our fathers began them ; human slavery, which compelled everything pertaining to labor and industrial life to wear its badge, added greatly to their height ; hordes of book-makers, with their omnipresent and cunning agents, are laying new courses every day ; and finally, perhaps, most powerful of all in this wall-building are the teachers themselves, who, in their professional zeal and pride, value most highly those things which most clearly distinguish their vocation, and which most separate them from other professions and from the working-world.

It is not my purpose now to dwell upon these points. They have not forced themselves upon me alone, and not unfrequently have they found forcible expression. On the very day that I addressed the State Association at Sweet Springs, Mo., Mr. Charles Francis Adams, Jr., delivered his Phi Beta Kappa oration at Harvard. Some of our thoughts ran surprisingly in the same vein. I deplored the fact that at Harvard I had spent the whole Sophomore year trying to read the orations of Demosthenes, chiefly that upon "The False Legation." So imperfect was my mastery of the language (and yet I was an average scholar) that I could not for myself see that Demosthenes was eloquent,—I learned that from my Greek history. Those orations (which I have looked at but once since, and that was to select a Greek declamation for a boy graduating from my school, and which, of course, no one understood at all,)—those orations had not then, and can never have, one-tenth the interest of Motley's *Dutch Republic*, of which I never heard one word while in college. I also expressed my deep regret that in place of the years spent upon Greek, I had not devoted the time to learning the arts and studying the thoughts of the intelligent working-world of to-day. Said Mr. Adams to the picked scholars of Harvard, referring to his own experience there:

> "As a training-place for youth, to enable them to engage to advantage in the actual struggle of life, to fit them to hold their own in it and to carry off the prizes, I must, in all honesty, say that, looking back through the years and recalling the requirements and methods of the ancient institution, I am unable to speak of it with respect. Such training as I got, useful for the struggle, I got after instead of before graduation, and it came hard; while I never have been able, and now, no matter how long I may live, I never shall be able, to overcome some great disadvantages which the superstitions and wrong theories and worse practices of my Alma Mater inflicted upon me. . . .
>
> "The college fitted us for this active, bustling, hard-hitting, many-tongued world, caring nothing for authority and little for the past, but full of its living thought and living issues, in dealing with which there was no man who did not stand in pressing and constant need of every possible preparation as respects knowledge, exactitude, and thoroughness,—the poor old college prepared us to play our parts in this world by compelling us, directly and indirectly, to devote the best part of our school-lives to acquiring a confessedly superficial knowledge of dead languages. . . .
>
> "I shall hold that I was not myself sacrificed wholly in vain, if what I have said here may contribute to so shaping the policy of Harvard that it will not much longer use its prodigious influence toward indirectly closing for its students, as it closed for me, the avenues to modern life and living thought."

Those are brave words, fellow-teachers, and from the bottom of my soul I believe that they are just and true. Neither Mr. Adams nor myself object to the study of the classics. We strive to recognize their place in the world of letters, and we would protect them from the shallow superficiality which is bringing them into disrepute. But we say, let them occupy their proper place and share of attention. Their sphere is special, and should be left to specialists. Let them not crowd out what are to ninety-nine of every hundred more useful, and therefore more valuable work. Mr. Adams refers to Harvard College, but as I said in Saratoga last year, the high schools and academies ape the colleges, and the grammar schools take their cues from the high schools.

" By their fruits ye shall know them." What are the fruits of this narrow system of literary and abstract training? Step out into the world and see. Society is dismembered. On the one hand is the aristocracy of those elaborately taught in the schools, filling to overflowing the so-called intellectual occupations with neither accurate knowledge of, nor sympathy for, those who labor and who form the other class. The fruit of their schooling is their withdrawal from the fields of manual labor under the promise of directive power both over their fellow-men and over the forces of nature. And yet how much excellent material is spoiled thereby! How large a per cent. of our educated people choose their occupations wrongly! How many of them fail either to direct their fellows, or a machine, or themselves successfully, and so eke out a miserable existence,—the drones and agitators of society.

Mr. H. K. Oliver, of Salem, Mass., said, ten years ago: "Our system of education trains boys not to become better craftsmen, but to be unwilling to be put to any kind of craft."

Hon. Edward L. Pierce says: " Our high schools are multiplying the number of young men and women who turn from farm, mechanical and domestic work, and seek employment as clerks and scriveners. As results there is a dearth of men fitted for surveying, mining, road-making, bridge-building, and farming."

Gov. T. T. Crittenden, of Missouri, in a recent message to the Legislature, said: " In our ordinary and more advanced schools the only vocations aimed at, and in which positive interest is aroused, are commerce, buying and selling, banking, reckoning accounts, keeping books, and the so-called learned professions. The ordinary schoolboy gets the idea that it requires no education to be a mechanic, hence he aspires to what is called a higher profession, a higher avocation, and foolishly learns, from vicious sources, to despise both draft and craftsman."

W. H. Riehl, speaking of Germany, says: "Other nations need not envy us the preponderance of the intellectual *proletariat* over the *proletaires* of manual labor. For man more easily becomes diseased from over-study than from the labor of the hands, and it is precisely in the intellectual *proletariat* that there are the most dangerous seeds of disease."

And George Eliot, speaking also of Germany, where the schools occupy either one narrow extreme or the other: "Germany yields more intellectual produce than she can use and pay for."

How many of those who thus go wrong live long enough to understand their errors, and have the strength and independence to acknowledge them?

Let us turn now to the other side, and consider more directly the fruits of manual training. By manual training I do not mean merely the training of the hand and arm. If a school should attempt the very narrow task of doing merely that of teaching the manual details of a particular trade or trades, it would, as Felix Adler says, violate the rights of the children. It would be doing the very thing I have all the while been protesting against. That, or very nearly that, is what is done in the great majority of European trade-schools. They have no place in our American system of education.

The word "manual" must, for the present, be the best word to distinguish that peculiar system of liberal education which recognizes the manual as well as the intellectual. Note distinctly, we do not wish nor propose to neglect nor underrate literary and scientific culture; we strive to include all the elements in just proportion. When the manual elements which are essential to a liberal education are universally accepted and incorporated into American schools, the word "manual" may very properly be dropped.

I use the word "liberal" in its strict sense of "free." No education can be "free" which leaves the child no choice, or which gives a bias against any honorable occupation; which walls up the avenues of approach to any vocation requiring intelligence and skill. A truly liberal education educates equally for all spheres of usefulness; it furnishes the broad foundation on which to build the superstructure of a happy, useful, and successful life. To be sure, this claim has been made for the old education, bnt, as we have seen, the claim is not allowed. The new education has the missing features all supplied. The old education was like a two-legged stool, and of course it lacked stability; the new education stands squarely on three legs, and it is stable on the roughest ground.

It was once my fortune to be a soldier, and the familiar evolutions of troops often furnish me with suggestive illustrations. One occurs to me now. The education of a boy, with his various faculties and appetites, for the struggle of life, is like preparing a regiment of ten companies for the ordeal of fire in the line of battle. If some of the companies are in good condition, while others are altogether unarmed and undisciplined; if some are dressed up sharply on the guide, while others are straggling miles behind, will the battalion be likely to do its duty? Think you there will be time, when face to face with the enemy, to bring up your undisciplined stragglers and instruct them in the first elements of military discipline?

In a manual training school we endeavor to have every company in its place, every arm in perfect condition, to always dress up on the color-sergeant, and to be ready for the foe at any moment.

I claim as the fruit of manual training when combined, as it always should be, with generous mental and moral training, the following:

1. Larger classes in your grammar and high schools.
2. Greater stability and perfection of character, moral and intellectual.
3. Sounder judgments and more correct estimates of men and things.
4. Better elections in the choice of occupations.
5. Higher spiritual and material success.
6. The elevation of many of the occupations from the realm of brute, unintelligent labor to one requiring and rewarding cultivation and skill.
7. Greater commercial, industrial, and intellectual progress.
8. The solution of the vexed labor-question.

I will briefly touch on these points:

1. Boys will stay in school longer than they do now. This conclusion is based on observation. You know how classes diminish as they approach and pass through the high school. The deserters scale the walls and break for the shelter of active life. The drill is unattractive, and, so far as they can see, of comparatively little value. *The Cleveland Herald* recently gave 2,701 as the number of pupils entering the grammar schools of that city. At the end of the fourth year, when the high school is reached, the number is reduced to 1,151. Here is the great turning-point. The pupils are 14 years old. The question is, Work or school? For more than half the answer is, Work. 545 enter the high school. The number falls to 237 the second year. The third year it is 145, and but 57 appear the last year. Superintendent Hinsdale, in his address last summer before the Ohio Association at Chautauqua, put the attendance thus: "Of 108 pupils

who enter the primary school, 60 complete the primary, 20 finish the grammar, 4 are found in the second year of the high, and 1 graduates from the high school." These figures are for both boys and girls. At the end of the course the boys are only about one-fourth of the whole. In St. Louis, the average age of pupils withdrawing from the public schools is 13½ years. [See my article on "The Age at which Pupils Withdraw from the St. Louis Public Schools," in the *American Journal of Education* for May, 1879.]

Now, from the influence of manual training upon boys, and indirectly upon the parents, I am morally certain that its introduction into the last year of the grammar and into the high schools, would add at least a year to the average term of schooling. Regret it and explain it as much as you like, neither fathers nor sons think the training of the higher classes worth what it would cost to get it. The figures show this conclusively. Add the manual elements, with their freshness and variety, with their delightful shop-exercises, and their healthy intellectual life, and *the boys will stay in school.* I know this to be true. I said to a grammar-principal in St. Louis the other day: "Put a course of training in the use of wood-working tools into your last year, and your eighth-grade class will be crowded with boys from all parts of the city, *who otherwise wouldn't go to school at all.*" He visited and studied our school, and concluded that I was right; and now he has asked the School Board for authority and means to carry out the suggestion.

If Mr. Seaver opens a public manual-training school in Boston for 300 boys, he will have 1,000 applications for admission during the three years he is organizing the complete school. Will this increase the cost of schools? Of course it will, but a good education always costs, and the money will be well invested, and those who now grumble at the school-tax will be silent.

2. Stability and perfection of character. Prof. Felix Adler has pointed out, with great force and elegance, the influence of the exercises of the shop upon the formation of character. This influence, he holds, will be "nothing short of revolutionary, inasmuch as it will help to overthrow many of the impure conceptions that prevail at the present day." (*Princeton Review*, March, 1883, page 149.) The tasks we set are not to be judged by commercial standards; the articles we make are not to be sold; they have no pecuniary value; they are mere typical forms; their worth consists only in being true, or in being beautiful, as the case may be.

"A habit is thus formed of judging things in general, according to their intrinsic rather than their superficial qualities. Gradually, and almost insensibly, the analogy of the work performed on outward objects will be applied to inward experience. A delicate sensibility to true and harmonious relations will be engendered. The pupil can be taught that, in the world of thought, and feeling, too, truth and harmony of relation are the sole ends to be sought. He can be exhorted to undergo similar toil, to be prepared for similar failures and disappointments, in order to realize at last something of the same inward perfection, which is to be his only and all-sufficient reward. Thus, while he is shaping the typical objects which the instructor proposes to him as a task; while he pores silently, persistently, and lovingly over these objects, reaching success by dint of gradual approximation, he is at the same time shaping his own character, and a tendency of mind is created from which will eventually result the loftiest and purest morality."

But I am met here by such excellent men as Superintendent Hinsdale, of Cleveland, with the objection that I am aiming at an impossibility. That if I attempt to round out education by the introduction of manual training, to develop the creative or executive side, I shall certainly curtail it of elements more valuable still. That the educational cup is now full; and that if I pour in my gross material notions on one side, some of the most precious intellectual fluid will certainly flow out on the other.

Now I deny that the introduction of manual training does of necessity force out any essential feature of mental and moral culture. The cup may be, and probably is, full to overflowing, but it is a shriveled and one sided cup. It is as sensitive and active in its own defence as are the walls of the stomach, which, when overfed with ill-assorted food, contracts, rebels, and overflows, but which expands and readily digests generous rations of a various diet. The figure is not too strong. Did you ever see one whose mind was nauseated with spelling-books, lexicons, and grammars, and an endless hash of words and verbal definitions? And did you, in such a case, call in the two doctors, Johann Pestalozzi and Frederich Froebel? And did you watch the magic influence of a diet of *things* prescribed by the former, and the effect of a little vigorous practice in *doing*, in the place of *talking*, under the direction of the latter?

The students of a well-conducted manual training-school are intellectually as active and vigorous as in any high school. Nay, more, I claim, and I have had good opportunity to observe the facts, that even on the intellectual side the manual-training boy has a decided advantage. I have been in charge of both kinds of school, and I know whereof I speak. The education of the hand is the means of more completely and efficaciously educating the brain. Such is, also, the conclusion of Felix Adler. And Mr. Charles G. Leland says:

> "The boy or girl who learns to design patterns, and work them out, is not only prepared by so doing for some more serious occupation, but also becomes cleverer intellectually. If we take two boys or girls of the same age and of the same brain-power, and give them the same book-studies, but allow one to occupy part of his leisure in learning to draw and work brass, while the other spends an equal amount of time in aimless amusement, it will be found, at the end of a year or two, that the former is by far the cleverer of the two."

I would go a step further than Mr. Leland. When the limit of sharp attention and lively interest is reached on any subject, then you have reached the limit of profitable study. If you can hold the attention of a class but ten minutes, it is worse than a waste of time to make the exercise fifteen. The weary intellects roll themselves up in self-defence, and suffer the pelting as patiently as they can, but the memory of that hour of torment lingers and throws its dreadful shadow over the exercise as it comes up again on the morrow; and how automatically, as these over-taught children take their places again, do they begin to roll themselves up into an attitude of mental stupidity! Intellectnal growth is not to be gauged by the length or number of the daily recitations. I firmly believe that in most of our schools there is too much sameness and monotony; too much intellectual weariness and consequent torpor. Hence, if we abridge somewhat the hours given to books, and introduce exercises of a widely different character, the result is a positive intellectual gain. There is plenty of time if you will but use it aright. Throw into the fire those modern instruments of mental torture, — the spelling and defining books. Banish English grammar, and confine to reasonable limits geography and word-analysis. Take mathematics, literature, science, and art, in just proportion, and you will have time enough for drawing, and the study of tools and mechanical methods.

Upon the question of the intellectual effect of manual training, I beg to quote a few words from a report I read on the day when our first class graduated in June:

> "Our exhibition to-day is not limited to a display of drawings, shop-work, and manual skill; we have had recitations in algebra, geometry, natural philosophy, chemistry, Latin, history, and English composition. In thus arranging our program, I have recognized the fact that nearly all persons admit the entire practicability and reasonable success of all the manual features of our school. The theory and the use of tools is as readily taught as arithmetic or Latin. But the question has remained in many minds, particularly among teachers: 'Do the pupils of a manual-training school prosecute ordinary school-work with an interest and success equal to that

observed in other schools?' They ask: 'Does not the interest which these boys manifestly take in their tool-work, in fact and of necessity, diminish their interest in and love for their books?' This is a natural inquiry, and some of our shrewdest visitors of late spent considerable time in our recitation-rooms searching for an answer to this question. Those of you who have listened to recitations in this school may be prepared with an answer. The testimony of our teachers, some of whom have had several years' experience in other schools, is very pertinent here. They all say that these boys do better work than do boys of the same grade without the stimulus of the manual training.

"My own conclusion, based upon the observation of the influence of manual education for at least eight years, — (for we had manual training with the students of our polytechnic school of Washington University, St. Louis, several years before the school was in existence),—my conclusion is that not only does our workshop not detract from the interest boys take in books, but it stimulates and increases it, either directly or indirectly. In mathematics, physics, mechanics, and chemistry, the help is direct and positive. Note, for instance, the mental arithmetic involved in the execution of a pattern from a working-drawing. No one can learn from a book the true force of technical terms or definitions, nor the properties of materials. The obscurities of the text-books (often doubly obscure from the lack of proper training on the part of the author) vanish before the steady gaze of a boy whose hands and eyes have assisted in the building of mental images. No classes in physics or chemistry were ever so ready as ours to help illustrate their text-books.

"Then, on the literary side, the habit of clear-headedness and exactness in regard to the minor details of a subject, which is absolutely essential in a shop, stretches with its wholesome influence into their study of words and the structure of language. As Felix Adler says, the doing of one thing well is the beginning of doing all things well. I am a thorough disbeliever in the doctrine that it is educationally useful to commit to memory words which are not understood. The memory has its abundant uses, and should be cultivated; but when it usurps the place of the understanding, when it insidiously beguiles the mind into the habit of accepting the images of words for the images of the things the words ought to recall, then the memory becomes a positive hindrance to intellectual development. The influence of manual training, when associated, as it is here, with mental culture, is intellectually and morally wholesome."

Dr. S. S. Laws, president of the University of Missouri, in a recent public statement, said that the learning of a trade was incompatible with the attainment of high mental cultivation. For, said he, when physical exercise becomes toil, there is a drain on the strength which must be recuperated before either mental or physical effort can be made again to advantage.

Now he was thinking of hard, wearisome toil, like that of the day-laborer with his ten hours of hard work. And on that basis he is of course entirely correct; but his remarks have no application to the students of a manual-training school. Our boys are never weary, and in their estimation the shop-hours are too short. The effect is like that of agreeable, judicious exercise, and the mental effect is positively good. From my own experience, I know the value of interesting exercise. By a daily row of an hour's length I am made capable of more and better intellectual labor; but to be a waterman and toil at the oar would unfit me for anything but sleep.

I confidently reassert my claim, that judicious manual training,—*training*, mark you, — conduces to perfection of mental and moral character. The finest fruit of all education is character; and the more complete and symmetrical, the more perfectly balanced the education, the better the fruit. Does any one ask for fuller details of our methods of instruction? I must not dwell upon them here: they are fully stated in our Fourth Prospectus, which may be had for the asking.

3. My third division of the fruit almost goes without saying. Men of sound judgment, who correctly estimate men and things, are said to possess common sense. We aim to cultivate that kind of fruit. Boys who put every theory to the practical test, who probe and gauge every statement and appliance, with whom authority and tradition, the bane of too much classics, have little influence, and who, therefore, have some conception of the proper perspective of human progress and human history, are apt to focus correctly upon the world and society of-today.

4. My next point, the Choice of Occupation, is one of the greatest importance, because out of it are the issues of life. An error here is often fatal. But to choose without knowledge is to draw as in a lottery, and when boys know neither themselves nor the world in which they are to live, it is at least an even chance that the square plug gets into the round hole.

Parents sometimes complain that their sons do not have a decided taste for a particular kind of work, and a wish to follow a particular kind of vocation. As a rule these complaints are very unreasonable. How can one choose wisely when he knows so little? Allow me to quote a few words from our catalogue:

> "It is confidently believed that the developments of this school will prevent those serious errors in the choice of a vocation, which often prove fatal to the fondest hopes. It is not assumed that every boy who enters this school is to be a mechanic. Some will find that they have no taste for

manual arts, and will turn into other paths,—law, medicine, or literature. Some who develop both natural skill and strong intellectual powers will push on through the polytechnic school into the professional life as engineers and scientists. Others will find their greatest usefulness, as well as highest happiness, in some branch of mechanical work, into which they will readily step when they leave school. All will gain intellectually by their experience in contact with things. The grand result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more sucful manufacturers, better lawyers, more skillful physicians, and more useful citizens."

Will it be to the point if I tell you what our graduates have chosen to do? The result of their choice lies beyond our knowledge in the future, but you may wish to know what, after three years with us, they wish to do. Will it tell against, or for the value of, the school if I say that more than half the class wish to begin life with some form of manual labor, as mechanics or draughtsmen? Does it make for, or against, the system if I say that out of twenty-nine graduates eleven will continue their studies in the higher department of the polytechnic school with a view to becoming finished engineers? Six or seven wish to enter shops and become thorough machinists, several would become architects, one an engraver, one a blacksmith, one a bricklayer and builder, one a stock-raiser, one a dealer in real estate, and one, about the ablest member of the class, is to be a farmer. All had been taught the principles of book-keeping, yet not one wished to be a book-keeper or a clerk. All are willing and able to work.

5. Correct choice brings success in all the elements of a manly career. The man who choses correctly is happy in his work; his labor blesses and enriches both society and himself. Success does not imply wealth, but it does imply competence. It implies the making the most of one's self, according to capacity.

We hear much, particularly from our friend Dr. Harris, of directive intelligence as a great end, or a means to a great end. But he who would successfully direct the labor of other men must first learn the art of successful labor himself; and he who would direct a machine properly must understand the principles of its construction, and be personally skilled in the arts of preservation and repair. Mr. Harris, therefore, tells but a half-truth when he says that [EDUCATION for May–June, 1883] "the practical education is not an education of the hand to skill, but of the brain to directive intelligence," and the connection in which this is said contains something rather disparaging to manual labor. I do not claim to fully understand him, and I may be in error, so you shall judge for yourselves. He says:

"The new discovery (the invention of a new tool) will make the trade learned to-day, after a long and tedious apprenticeship, useless to-morrow. The practical education, therefore, is not an education of the hand to skill, but of the brain to directive intelligence. The educated man can learn to direct a new machine in three weeks, while *it requires three years to learn a new manual labor.*"

This last sentence is not clear to me. As to directive intelligence, I respectively submit the following as a substitute for the dictum of Mr. Harris:

"The practical education is, therefore, an education of the hands to skill and of the brain to intelligence. The combination will give the highest directive power."

This matter of directing a machine reminds me of a story told of Boston, over twenty years ago, in the *Massachusetts Teacher.* It was reported at the Hub that in one of the great cities of the West an establishment had succeeded in making a steam fire-engine of great efficiency. (Those Western cities have a way of taking the lead sometimes.) So Boston ordered an engine, taking a guarantee that it should work so and so. The machine arrived, and was exhibited by its makers. Its performance was marvelous, and altogether satisfactory; so it was accepted, paid for, and the makers went home. A picked crew of active Boston boys was placed in charge of the newcomer, and people almost longed for a big fire that they might witness its sudden extinguishment. The big fire came and so did the machine, but the water failed to rise to the exigency of the occasion. It hissed and foamed and screamed, but threw no water. It was a great disappointment. The next day it was sent to a shop and overhauled. The next fire it failed again. The city fathers then turned round and sued the makers for selling them a machine that wouldn't go. The maker came on to defend himself. Said he: "Gentlemen of Boston, that machine was all we claimed for it. It was made by the most skillful workmen, and, in their hands, it worked to perfection, as you yourselves saw. The men you placed over it were without skill, and you sent it to a locomotive-shop, where they don't know what fine workmanship is. Put the machine in proper hands and it will redeem itself. What you evidently need here in Boston is *directive intelligence.*"

6 and 7. I claim next, as fruit of the introduction of manual education, the elevation in honor and respect of the manual occupations of men. A brute can exert brute strength; to man alone is it given to invent and use tools; hence man subdues nature and builds art

through the instrumentality of tools. Says Carlyle: "Nowhere do you find him without tools; without tools he is nothing; with tools he is all." To carry a hod one needs only the muscles of a brute. To devise and build the light engine, which, under the direction of a single intelligent master-spirit, shall lift the burden of a hundred men, requires human intelligence and human skill. So the hewers of wood and drawers of water are in this age of invention replaced by planing-mills, and water-works requiring some of the most elaborate embodiments of thought and skill. Can you stand beside the modern drawer of water, the mighty engine that day and night pumps from the Father of Waters the abundant supply of a hundred thousand St. Louis homes, and not bow before the evidence of "cultured minds and skillful hands" written in blazing characters all over the vast machinery?

In like manner every occupation becomes ennobled by the transforming influence of thought and skill.

The farmer of old yoked his wife with his cow, and together they dragged the clumsy plow or transported the scanty harvest. Down to fifty years ago the life of a farmer was associated in all minds with unceasing stupefying toil. What will it be when every farmer's son is properly educated and trained? Farming is rapidly becoming a matter of horse-power, steam-power, and machinery. Who, then, shall follow the farm with honor, pleasure, and success? Evidently only he whose cultivated mind and trained hand makes him a master of the tools he must use. With his bench and sharp-edged tools, with his anvil and his forge, his lathe and his tap, he will "direct" his farm-machinery with unparalleled efficiency.

Do not suppose, as some appear to do, that the continued invention of tools will diminish the demand for skilled labor,—for, on the contrary, it will increase it. Said Mr. William Mather, of Manchester, England, to a Philadelphia reporter a few days ago, "The higher the development of mechanical contrivances to reduce merely manual labor, the greater in other directions will be the demand for a finer skill and mechanical knowledge." In general, whenever in the progress of the arts an occupation involves the skillful application of scientific principles; when its instrumentalities are the products of close observation, logical thought, and manual skill, the dignity and attractiveness of the occupation is greatly increased.

Manual exercises, which are at the same time intellectual exercises, are highly attractive to healthy boys. If you doubt this, go into the shops of a manual-training school and see for yourselves. Go, for instance, into our forging-shop, where metals are wrought through the agency of heat. A score of young Vulcans, bare-armed, leather-aproned, with many a drop of honest sweat and other trademarks of toil, stand up to their anvils with an unconscious earnestness which shows how much they enjoy their work. What are they doing? They are using brains and hands. They are studying definitions. They are looking out in the only dictionary which really defines the meaning of such words as "iron," "steel," "welding," "tempering," "upsetting," "chilling," etc. And in the shop where metals are wrought cold (which, for want of a better name, we call our machine-shop), every new exercise is like a delightful trip into a new field of thought and investigation. Every exercise, if properly conducted, is both mental and manual. Every tool used and every process followed has its history, its genesis, and its evolution.

I cannot expect you all to sympathize with me fully here. We teachers have been more given to studying the derivation of words than of tools, though the latter are full of the thoughts that words are inadequate to express.

I have been speaking of the shops of the manual-training school, not of the ordinary factory. In the latter everything is reduced as much as possible to a dull routine. Intellectual life and activity is not aimed at. The sole object of the factory is the production of articles for the market. In a manual-training school, on the other hand, everything is for the benefit of the boy; he is the most important thing in the shop; *he is the material to be finished.* Such boys leave the school with no suspicion that labor is a curse; that a pair of overalls and a hard hand are things to be ashamed of. They have been taught to use their brains and hands together. They will find that in the world that is a thing too rarely done.

These active, thinking boys, the products of the new education, are going to redeem the world. Through them the age is to lose nothing of its high intellectual life; it will rather gain from its broader foundation. Through their aid such an age of invention as we have never seen will surely come. Colonel Jacobson, of Chicago, says: "When all our boys shall be educated in manual-training schools, the inventive genius of the country will be stimulated beyond all conception. The skill engendered will be a protection to home industry such as the most radical protectionist has never yet dreamed of. It will put an end to all foreign competion in American markets." This brings me to, and sufficiently covers, my seventh point of commercial and industrial progress.

8. Finally, I claim that the manual training school furnishes the solution of the problem of labor *vs.* capital. The new education

gives more complete development, versatility, and adaptability to circumstance. No liberally trained workman can be a slave to a method, or dependent upon the demand for a particular article or kind of labor. With every new tool and new process the cultivated artisan rises to new spheres of usefulness and to new dignity.

In earlier times, when the day-laborer was little better than a machine, with no freedom or amplitude, almost helpless and useless away from his crank, progress was well typified by a ruthless car, which, with most unequal and cruel pressure, ground to powder the unfortunates under its wheels, who had no elasticity, no power of escape.

When the new education shall have fully come, progress will be better represented by the ship of State, which rests gently and gracefully upon all, without inequality or oppression. Rigidity has given place to fluidity. The elements yield, and do not break. Thus, without friction or oppression, and hence without bitterness and strife, shall our progress be made. The sense of hardship and wrong will never come, and bloody riots will cease when workmen have such mechanical culture that the invention of a new tool, a grand labor-saving machine, only adds new power and dignity to their skillful hands.

Since writing this, I clipped an item from the JOURNAL OF EDUCATION which bears upon two or three of the points I have tried to make. They seem to have adopted in France what I will venture to call the plan of the American Manual Training School. I quote:

> "On Thursday, May 3d, Jules Ferry assisted in laying the corner-stone of a school at Vierzon, whose object is the training of artisans. The doctrine now so strongly advocated by his party,—namely, that all social disturbance may find its corrective in education,—was fully expressed in his address. Caste, he said, would vanish when tools were found in schools alongside of maps and books; the nobleness of manual labor would be perceived, and concord would spread. The principles common to all handicraft would be taught, so that boys would be able with full knowledge to choose their vocation. Such schools would tend to root out anarchist passions founded on ignorance, to elucidate social problems, to reconcile the masses to natural laws, and to prepare the Nation to meet foreign competition."

Such are some of the fruits of the new education when perfectly applied. We cannot expect it to spring full-armed from any one's head. It will be a matter of growth. We must see to it that we make few mistakes.

A word of warning comes to me at this late moment, that our results in St. Louis will be looked upon with suspicion, for the reason that our boys are picked boys, of more than average zeal and ability. I do not think the allegation is true. At first the boys were largely self-selected as fond of tools. As generally, however, they were supposed to be not fond of books. Later the boys have come for the breadth of training they are to get; for their health, because they wouldn't go anywhere else. I think them of about average ability.

You will observe that I have said nothing of the manual training girls should have. Girls should have manual training as well as boys, and half the arguments apply equally to both. We have no school which has attempted much in this direction that I know of, except Professor Adler's school in New York, of which Mr. Bamberger is principal. The subject is full of interest, but I have no time to dwell upon it.

Fellow-teachers, do not close your eyes to the truth because it shows that we have been in the wrong. Do not suppose that because our schools have done and are doing great and glorious work, they have not their short-comings. If they are to be improved, the changes are to be wrought by us. The schools are in our hands. Let us be frank and open-minded. Let us not sacrifice the ninety-nine who do not complete our elaborate course of study to the interests of the single one who does. Let us not sneer at the training which enables one the more readily to earn a good living in the world, and then lay great stress upon a training which only the children of those who have earned good livings can afford to take.

Let us lay aside superstition and a morbid devotion to what is dead and gone, and consecrate ourselves anew to the salvation of the present and the future. To draw a figure from George Eliot: "Do not suppose that the sun will go backward because you insist upon turning back the hands of your clock."

NOTES ON THE ORIGIN OF THE ITALIAN LANGUAGE.

BY W. C. WILDE.

The language of the Aborigines, as they are designated, in the earliest accounts that we have of them,—the conquerors of Latium, and ancestors of the Latins,—there is the strongest evidence to show was not Greek, but, like the Greek, derived from the Sanscrit itself. When we first hear of the Italian peninsula it was held by the Latins, Sabines, Umbrians, and Oscans, or, as they were sometimes called, Sabellians. Of the first two languages very little remains; both Umbrian and Oscan inscriptions are numerous. In the Engubine tables some of the declensions of the nouns have been distinctly made out. Here we have *populur* and *asa*, answering to *populus* and *ara* of the Latin, the inflections of which run nearly with the Sanscrit. The Umbrian and Sanscrit numerals closely resemble each other; the Umbrian *desen* (ten) and the Sanscrit *da'san* are almost identical. In the pronouns a still greater affinity appears. The second person singular, accusative, of the personal pronoun in the Umbrian ends in *m*. Thus, of *tio* or *tui* we have *tiom* or *tiam*,—almost the Sanscrit *tuâm*, which answers to *te* of the Latin, and *τε* of the Greek.

The language introduced into Rome by its founders and first inhabitants was, in all probability, one of the dialects of Latium. After Rome became a place of some consequence, enough of this language remained to show that its parentage was very strongly Umbrian. Take the following: The verb *esse*, under one form or other, appears a number of times in the Engubine tables. Besides *erunt*, exactly the Latin form, we have *erirunt*, *erihunt*, *erasunt*. The form last given is probably the most ancient of all,—it is certainly the most curious. It would show that the future of the Umbrian verb *esse* is really an analytic tense. Here *era* is part of the verb, and *sunt* would appear to be the third person plural, indicative,—afterwards lost,—of the radical *su*, in Sanscrit *bhu* (to be). The same observation holds good in regard to the Latin future, the Sanscrit having a future, formed precisely in the same way. Here, then, we have a most striking analogy between the Sanscrit, Umbrian, and Latin, and all to be found in a single verb.

The resemblance between the Latin and Sanscrit pronouns is something quite as remarkable. In the early Latin inscriptions we meet with *eom*, equivalent to *illum eum*, and the accusative plural *eos*, answering to *illos eos*. These two accusatives would infer a nominative singular, which must have been *so* or *se*, almost identical with the Sanscrit *sa*. Again, there is in the Sanscrit an adverbial form to pronominal adjectives; viz., the suffix *tha*. Thus, of *sarva* (all) we have *sarva tha* (in every manner). From *anya* (other) *anya-tha* (otherwise) is formed. Now the same form exists in the ancient Latin. Here we see *aliuta* (otherwise) formed in the same manner from *alius*. It is exactly the same formula, applied to the same word, with the same effect precisely.

Now, from all these facts, it would seem clearly established, first, that the ancient language of Latium,—whether Umbrian, Sabine, or Oscan, — bore the strongest affinity to the Sanscrit; second, that in the most ancient monuments that we have of it, even there, it shows the clearest evidence of decay. That disintegration in the Latin, too, began a great way back, also appears in its earliest inscriptions. This is first observable in the frequent use of the prepositions. Those most habitually used were *in* or *endo*, *af* or *ab*, *de*, *cum*. Of course, with their use, the inflections rapidly disappeared. The first, no doubt, to go were those whose sounds were least perceptible, and those the suppression of which would render the language more facile, and its use more expeditious. The sign of the singular masculine (*s*) was one of the first letters to disappear. Even the poets themselves, when the language first attempted to be literary, wrote indifferently *bonu* or *bonus*. But there were other terminals besides quite as transient. These were the terminations in *m*. For example, the nominative singular of the neuter, the genitive plural, and the accusative singular. In the laws of the Twelve Tables the following sentence occurs: *Qui im vinctom habebit*, — that is to say, *Qui sum vinxerit*. Even in the poems of Nævius and Ennius we see *fratri*, *patri* used in place of *fratus* and *patris*. In a *Senatus Consultus de Bacchanalibus* the same disintegration may be noticed, — only in a manner more striking, however. Here *velle* is found as many as eight times as an auxiliary, assisting in the declension of other verbs apparently too weak to get along alone. To these other corruptions were added in the language of the camp (*castrense verbum*), and military expressions (*militaris sermo*) which teemed with barbarisms. The Italian word *guerra* intruded in the place of the Latin *bellum*, no doubt, was one of these.

Indeed, quite a vocabulary of these ancient Latin words may be picked up in our different Latin classics or early ecclesiastical writers. *Brodium* we find in St. Gaudentius; *testa*, with the signification of *capo*, in Ausonius; *camesia* is recorded by St. Gerolomus: *torta* is to be found in the Vulgate; *cribellare* in Palladium; *bramosus*, *grossus*, *bucca* in St. Zenone; *minare* in Apulius,—whence the Italian *minare*. *Nanus* is mentioned by Gelius; *letamen* is used by Pliny; *jornus* and *tonitrus* appear in Seneca; also, *retornare*, *putilla*, *puta*, *strata*, are frequently to be met with in early Latin writers. The cultivated classes of Rome would use *esse*, *hyems*, *minae*, *pecutere*; the lowest characters in Pläutus say *essere*, *vernus*, *minacia*, *batuere*. *Bellus* and *russus*, which we find in Catullus; and *caballus*, to be met with in Horace, were used by the plebeian to express *pulcher rubens*, and *equus*. Now all of these words were simply fragments of the ancient tongue of Italy, which afterward became modern Italian. It is certainly curious to observe, even, while they seemed to court corruption, in the form of their language, how fast the people held on to their dear old words. And so, when literary Rome arose, two distinct languages appear. The language of education became the language of the gentry, — the plebeian simply continued the talk of the old tongue.

When the barbarians thundered at the gates of Rome, these two languages still continued to exist,— as they had existed for centuries, side by side,— throughout the length and breadth of the Roman empire. As the invaders spread themselves over the country, the common people must have been brought in daily, hourly contact with them. The gentry, on the other hand, shut themselves up in their castles and strongholds, kept themselves to themselves, and rarely associated with the barbarians. Hence the intruder, if he was inclined to learn the language of the one, had very little opportunity to do so; the patois of the other he heard spoken almost every moment of the day. The accommodating forms of the vulgar speech made it much more easy to be expressed and understood. In the language of the gentry, most of the old inflections remained; and so the talk of the people owed its preservation to its weakness, while the grammatical forms of the language of classical Italy was the very cause of its decay.

Let us see what was the Latin of Italy in the *Carta plenariæ securitatis*, dated in the thirty-eighth year of Justinian. This, be it remembered, was only forty-five years after the death of Theodoric, the first of the Italian Gothic kings. Here we have an Italian vocabulary, Italian idiomatic phrases, Italian rules and construction, diametrically opposed to those of the Latin. Again, in this document prepositions are everywhere to be met with, fixing the signs of the case. Further, we notice the employment of particles in the ablative absolute, singular, although preceded by nouns in the plural. Take the following extraordinary phrases: Arcas olearias duas valente siliqua una, and Casali Petroniano, fundi Saviliano. Here is a more extended quotation: "Item notitia quod accipit supra scriptus Gratianus de domus quae sunt in diversis territoriis, et ex domo quae est ad Sanctæ Agathæ Rav. secundum fidem documenti, uncias duas ex domo quae est post basilica Sancti Victoris Rav. secundum fidem donationis ; uncias quatuor ex casa qui appelatur Casa-Nova Rav, territ secundum fidem donationis uncias quatuor ex fundi Saviliano, quod obvenit per donatione Gunderit uncias duas ex casale Petroniano," etc. Now all of this long extract might be translated into modern Italian without changing the position of a single word.

Among the curious documents that have reached down tó our times is the Lombard code of laws. Let us see how it reads. In the enactments of Lutpraud, promulgated A. D. 724, we have the following; "Non reputetur culpa ad proprium dominum." What is that but Italian? "Non sia imputata la colpa al propio padrone?" Take this: "Veruntamen non occidatur, nec si scematio corporis fiat." Nothing more this but nondimeno non uccisa fia, ni lei scematio di corpo fia. Again the following occurs: "Fit traditus in manus de parentibus ipsius mulieris, nam non in manu mariti sui," which in Italian would be, Sia tradito in mani de parenti delli moglie stessu non in mano del suo marito."

In one of these laws we find *habeo* as an auxiliary used precisely in the same manner as may be noticed in the laws of the twelve tables quoted before, and exactly as may be seen in some of the Neolatin languages to-day. In another of these acts we have: "Hæc autem rei veritas, pervenit ad nos, quod quidem homo diabolo instigante dixisset ad servum alienum. Veni et occide dominum tuum et ego tibi *habeo facere* bonitatem quam volueris." The preamble goes on to say: "Feri eam et adhuc, nam si non faceris, ego te *ferire habeo.*"

Certain notarial acts of this period, published by the learned Muratori, it would be impossible to fully comprehend without some knowledge of the Italian. Take the following, with dates attached: "De uno latere corre via publica, et de alium latere est terrula Pesinnali plus menus modiorum dua," etc. (*Antiq. it med. ævi, t. iii., A.* 730). "Usufructu de ipsas res et filio aut filia de conjuge mea Alderada abuero et ipsi sic persolvo in ipsa ecclesia . . . . et si ipsa conjuge super me vixere et lecto custodierit, avea medietate ipso usufructum" (*Id., A.* 763). "Persolvere debeamus tres urnas de vino, et uno porco tremesiale et uno berbice, similiter valente uno tre-

misse" (*Id.*, *A.* 776). The Italian of the last paper quoted is particularly to be noticed. We meet here the article *uno* precisely as it would be used to-day. In a donation cited by Muratori (*Antiq. et dess, xxxi.*), Charlemagne cedes to the church of Saint Anastesius in Sienna: "La terra di Ansidonia." Here we notice not only the definite article *la*, but an entire Italian sentence, exactly as it would be expressed now.

There is a curious manuscript of the VIIIth century, entitled "Compositiones adtingenda musiva, pellas et ad deaurendum ferrum," etc., to be found in one of the libraries of Lucca. This Muratori has inserted in his twenty-fourth dissertation, with the following remark: "Nusquam memini me videre monumentum serae antiquitates italicae vulgaris linguae frustulis tam saepe immixtum; *i. e.*, ejicis, at refridet, secundo quod, pro secundo che; cuse ipsas pellas pro cuci le stesse pelli; laxas desicarre, pro lasci siccare; pone ad battere;" etc.

The following extract from this manuscript may not be uninteresting. Under the head, "De mosibum de argento," we have this sentence: "Mesibum de argento secondo quod superius exposuimus ita omnia facies." In the chapter "De petalo auri" we have the following instructions: "Batte lacmina . . . . . et si una longa fuerit vel curta, per martellam adequator tam de latam quam de longam. De illi,—duas octo petiae fieri debent. Scaldate illo in foco batte, et tene illud cum tenalia ferea, sed tornatur de intro in foras." One more extract, and we will close this part of our subjeet. In a document of the Xth century, also published by Muratori, we find this passage: "Da piede lo ponte della Liccia et da capite la Castellazzo ex latere la strada e lo Molino e lo Gargalo di Casa Luna, etc. Item damus vobis lo Piano della cerchis."

Now, it must not be forgotten that all this jumble was not intended for Italian, but Latin; not the first trying to express itself in the last, but the Latin trying to express itself in Latin. The vulgar spoken tongue, no doubt, was much more Italian than any of the documents we have given. Indeed it is said, in the reign of the Emperor Mauricius (A. D. 582–662), while a battle was waging, some one called out, "Torna, torna, frater!" and the army took to flight. Now it is evident from this that they must have spoken very good Italian in those days; and it does look as if the whole Roman army understood it.

But what could be more complete in a mixture of language than the extracts we have given above? Here, while we find more Italian than Latin, we have the Latin and Italian words in the same sentence,—the two different forms of declension and conjugation side by side. But was the language of Chaucer any better when the vernacular had already become English? Here we find both the English *I* and the Anglo-Saxon *Ic*, *of*, *Gods gifte; of loves* (in the last, both forms in the same word). The use of the article *a*, and sometimes the omission of it, even in his prose, where there was no necessity for omitting it; the use of both the English and Anglo-Saxon future, both forms of the infinitive, etc. Is the language of Chaucer any more intelligible now to the general English reader?—nay, is it as intelligible as the Italian-Latin we have just been quoting would be to any Italian to-day? We doubt it.

In 1822, Mr. S. W. Singer edited the works of Chaucer. The first line of the works,—for the "Canterbury Tales" always come first,—runs, as everybody knows, this wise:

> "When Aprill with his showeres sote."

Now Mr. Singer, in the vocabulary attached to the works, says *sote* is a Saxon noun, and translates it *soot.* Could any ordinary English reader, unaided and unassisted, do any better than this, now?

It must be noticed in the extracts we have given of this Latin about to become Italian, that the prepositions *in*, *de*, *con*, appear to have a great deal to do, and that the inflections, under their influence, rapidly disappear. Indeed, there seems to be a tendency, as much as possible, to simplify the language. The sign of the Latin masculine nouns (*s*) is one of the first letters to to go. Next comes the substitution of *habeo* as an auxiliary verb; *volo*, likewise, assisting in the same kind offices,—all of which may be seen in the ancient Latin inscriptions long before the classics appeared.

It will also be remembered in these extracts of Latin-Italian, or Italian-Latin,—whatever the language may be considered,—that all the principles of Italian grammar may be noticed. They hold a pretty full vocabulary besides. More may be found in other documents, certainly not more recent than the Xth century,—*e. g.:* "*Unu, quatro, trenta, quaranta, cinquanta, conciare, zappare, viticella, rio, ribariola, mulino, mulinaio, gronda, fontana, prato, pratanella, pantano, pantanello, strata, ambascia scotella capo, cambiare, favellare, causa rocca, botecha.* The origin of some of these words is curious. *Ambacht*, in the Gothic, is a servant. In the low Latin we have *ambaxia, ambactus*, from whence *ambassine*, and our English *ambassador.* But the Italian still preserves in *ambascia* something of the original meaning of the word, by inference, in shortness of breath, the being out of breath, weariness, trouble, distress, anguish.

All of the Neolatin languages are homogeneous in their general character; they only differ in some forms and details, as each completed its system apart. Those nearest to Rome, it would only be reasonable to suppose, should have the closest resemblance to the Latin and each other; but was it always so? The natal homes of the Italian and Daco-Roman, or Wallachian, were widely divided; and yet the resemblance between them is something wonderful. Why might not that be? The fountain-source from which both sprung was identical. The province of Dacia, in the last days of the Roman empire, was completely cut off from Rome; yet the two languages remained one and the same, none the less.

The truth is, the Daco-Roman, like the modern Italian, came directly from the Roman patois; both were nothing more or less than the common vulgar speech, developed and purified. There can be no doubt that changes were left all over the face of the land, as invasion after invasion swept over it; but the two languages, in all of their most prominent features, remained the same. The barbarian might mar, but he could not make, the tongues of the people,—that had already been done, before he came.

It must be noticed, even in the most superficial comparison of the two, that when the Latin ceased to be the language of Italy, it had lost most in the elimination of its consonants. The middle ones, in all probability, were the first to go. *P* and *c*, when joined with *t*, were likewise rejected. Also *m* preceding *n*,—no doubt to save an effort in pronunciation. As a rule, whenever a consonant occasioned any difficulty, it was suppressed. The Latin diphthongs were replaced by single vowels. In the roots of the verbs of the second and third conjugation, the changes were considerable.

If the substitution of vowels for consonants was most frequent in these changes, there was an intrusion of consonants as well. One of the most curious of all of these intrusions, however, is the *o* in the Latin *vidua*, whereby the word was brought back almost to Sanscrit, in which it appears as *vid'ava.*

L, of the Latin group *pl* and *fl*, was vocalized in the Italian. Instead of *plaga*, *pluvia*, *pluma*, and *flamma* of the Latin, the Italian has *piaga*, *piova*, or *pioggia*, *piuma*, and *fiamma.*

The hardest struggle the language seems to have had was for its pronunciation. Sometimes the rougher, northern elements would win, but it was not often. One evidence of a triumph appears in the *tch* pronunciation of *cielo* and *cibo.* To northern influence the language owes the introduction of the letter *d* before *g* when the last is followed by *e* or *i*, as in *gli.* The same influence is apparent in certain verbs. Not infrequently we find the Teutonic hard *g* intruded between *n* and the final *o* of words, as, *pongo, rimango, tango;* or the *g* is doubled, as, *seggo, traggo,* etc.

The parent of the Italian indefinite article *uno* was the Latin numeral *unus*. In the most ancient form of the Latin this was *aino*, which must have been *ai-no* in the primitive Aryan. In the Eugabine tables we have *une–unu*.

The final syllable of *ille*, *illa*, etc., was the source from which the Italian took its definite article. The partitive article *degli* would appear a compound, *dei–de-i*, with the *g* intruded. Where the language got *g* we have already shown. The Gothic *sa*, in the sense of *ille*, *ipse*, of the Latin (*αυτος* of the Greek), appears only three times in the Bible of Ulphilas: *Sa ïst Hêlias* (Matt. xi.: 14); *sa ïst* (Mark xiv.: 44); and *sah vas Samareitês* (Luke xvii.: 16).

The prepositions used in Italian declensions are taken, with a single exception, from the Latin. These are: *A*, *ad*, *di*, *da*, *con*, *fra*, *in*, *per*, *su*, *tra*, which are known as real prepositions. *Fra* is pure Gothic, from whence our English *from*. This single invader, standing solitary and alone among the natives, looks melancholy indeed. The other Italian prepositions not ranked as real prepositions are Latin adverbs, or compounds of adverbs, prepositions, nouns, and participles. Their dissection would afford some amusement to the curious in such things. *Fuori* is no doubt the Latin adverb *foras*; *eccetto* comes from *ad excepto*; *dopo* is possibly a compound of *de* and *postea*; *adosso*, certainly a compound of *a* and *dorsum*; *giusta*, Latin adjective *justus*; *salvo*, also from an adjective *salvus*; *senza*, from *sine*; *sotto*, Latin adverb *subter*; *dietro*, Latin adverb *dierecte* (with a mischief, and hence, by inference, from behind).

The ancient Italian pronoun of the first person, *eo*, approaches nearer the Latin *ego* than anything that can be found in the Neolatin languages, with a single exception. Both the Italian and Daco-Roman have *io*; but it is a well-known fact that the French in the ninth century used *eo* and *io* for *Je*. In the oaths of 842 we find *Si valvarai eo*, and *si io returnas*.

Ci and *e*, of the Italian personal pronouns of the third person singular, comes from the Sanscrit *ayam* (*e* + *am*) of which it is only a contraction. *Esso* is probably the old form of the Latin pronoun *ipse*, with the *p* elided. In the Eugabine tables we have *isec* and *issoc*, and in Oscan inscriptions, *iseis* *Tu* of the Italian is the Sanscrit pronoun *tvam*, rejecting the suffix *am*.

Questo, in all certainty, comes from the Latin demonstrative *iste*, *ista*, which makes its dative in *isto*. Several of the Italian dialects have preserved it without any modification or change whatever; others, by a retrenchment similar to that effected in *ille*, *illo*,—out of which the Italian *lo* has been made,—have made *sto* and *sta* from *isto* and *ista*. Documents of the sixth century prove that this change was then in general usage in certain parts of Italy; as in Ravenna, in Rimini, and along the shores of the Adriatic, where these words were used sometimes as articles, and sometimes simply as pronouns.

The Latin being synthetic in form, made its comparisons by suffixes. The Italian, held to be analytic, shows here only some, not all, of the weakness of the Neolatin tongues. The Italian, in its comparisons, is rich with both forms. To express the comparative of *bono*, the Italian has *meglio*, as well as *più bono;* for the comparative of *male*, the Italian has *peggio*, as well as *più male*. The French would appear to be entirely deficient in a superlative for these two words, unless it be proper to say *tres*, or *plus meilleure*, and *plus*, or *tres pire;* while the Italian, in *-simo* and *-ssimo*, has a superlative for everything.

It should be observed that the Latin did not form the first person singular present of its verbs from the oblique cases of the first person of the pronoun, as the Sanscrit, but directly from the nominative *ego*. Thus, *amo* is a contraction of *am-a-o*, which is also a contraction of *am-a-ego*. In the first person of the verb the Italian retains the Latin terminal *o*. The Italian terminal of the second person is *i*. This is no doubt a retention of the old vulgar Latin. We have already noticed this very corruption as far back as the days of Nævius. The French form, at one time, was *tu pars*, *tu dis*, *tu reçois*, etc. The Italian has been more consistent in its old ways. It has entirely rejected the *s*-terminal of the second person singular in all its cases, as well as the *t*-terminations of the third person, of the classic Latin.

Besides the letter-changes already given, there are others, which are most observable in some of the Italian verbs. *B* here takes the place of *v*, and *ss* of *x*. Thus, instead of *amabam* of the Latin, we have *amava* in the Italian imperfect indicative; while *ressero*, the Italian future indicative, answers to *rexerunt* of the Latin.

The preterit of the Sanscrit *b'u*, disengaged of its augment, furnishes the Latin with the inflections of its imperfect indicative. This was *ab'av-a-m*, *ab'av-a-s*, *ab'av-a-t; ab'av-â-ma*, *ab'av-a-ta*, *ab'av-a-n*. These inflections, all of the Neolatin languages, follow; consequently we find in the Provençal: *ama-va*, *amav-as*, *ama-va; ama-vam*, *ama-vatz*, *ama-van;* in the Spanish, *ama-ba*, *ama-bas*, *amaba*, *ama-bamos*, *ama-bais*, *ama-ban;* in the Italian, *ama-va*, *ama-vi*, *ama-va*, *ama-va-mo*, *ama-vate*, *ama-vano*. The perfect-indicative of the Latin verb *sum* was the source from which all the Neolatin verbs took their perfect or past definite. In the Latin we have *fu-i* for *fu-v-i* of the ancient verb *fu-o*, *fu-iste*, *fu-it*, *fu-imus*, *fu-istis*, *fu-erunt* or *fu-ere*.

In the perfect-indicative of *amo* we have *ama-v-i* for *ama-fui*, *am-a-v-isti* for *ama-fu-isti*, *ama-v-it* for *ama-fu-it*, *amav-i-mus* for *ama-fu-imus*, *ama-v-istis* for *ama-fu-istis*, *ama-v-erunt* for *ama-fu-erunt* or *-ere*. So in the Italian we find *vende-i*, *vende-sti*, *vende*, *vende-mmo*, *vende-te*, *vende-zono*.

The formation of the Neolatin future is still more curious. This is made up of the auxiliary verb *ho* and the infinitive of the associated verb, and shows how strong the tendency of the language was to disintegration. Under this singular composition, *amare ho*, *amare hai*, *amare ha*, *amare abbiamo*, *amare avete*, *amare hanno*, becomes *amero*, *amerai*, *amera*, *ameremo*, *amerete*, *ameranno*. This mode of forming the future is found in all of the Neolatin languages except the Wallachian. With particular reference to the Spanish, this is noticed by Antonio di Nebrixia, or Lebrixa, in his "Grammatica sobre la lengua Costellana," in 1492.

In *âse*, one form of the Sanscrit infinitive, we recognize the original of the infinitive of Neolatin verbs; hence *es-se*, *pos-se*, *ama-re*, *mone-re*, etc.

The suffix *-ant*, *-nt*, which occurs in all Aryan languages, is chiefly employed in the formation of the present participle. The Gothic form of the suffix is *-nd*, *-nda*, and this the Italian very nearly approaches in *vende-nd-o*, *serve-nd-o*, *ama-nd o*, etc. In Sanscrit the suffix of the past participle is *-ta* (*-tas*, *tâ*, *-tam*), corresponding to the the Latin *-tus*, *ta -tum*. In the Italian we have *avu-to*, *avû-ta*, *avû-ti*, *avu-te* ; *sta-to*, *sta-ta*, *sta-ti*, *sta-te* ; *comprâ-to*, *servi-to*, *vendu-to*.

It would seem most proper that these notes upon origin of the Italian language should end here, but a friend asks, "Can the time be fixed exactly when the Italian superseded the Latin, and became entirely and absolutely the language of Italy? We doubt if any such date could be given. As early as the beginning of the XIIIth century the Italian had something of a literature of its own. Two inscriptions have been generally quoted, which, if their dates are correct (and they have been questioned), might place the Italian as pretty well developed in the middle of the XIIth century. One of these, at one time, might have been seen in the Cathedral of Ferrara, and bore date 1135. The other commemorated an event that happened in Tuscany in 1184.

The story goes that the Emperor Frederich, surnamed Barbarossa, in a visit to the Magello, took up his residence with one of the Ubaldini. In a hunt one day, a stag was about escaping, when Ubaldino degli Ubaldini seized it by the horns, and so held it fast until the Emperor came up and killed it. Struck by the boldness of the deed

Frederich gave the Ubaldini the horns of the stag as a cognizance, which his family ever afterward bore. The inscription, cut to commemorate this event, was written both in Latin and Italian. The Italian ran thus:

Con lo meo cantare
Dallo vero, vero narrare
Nullo ne diparto.
. . . .
Cacciato da Veltri,
A furore per quindi eltri
Magelliani cespi un Cervo
Per li corni ollo fermato.
Ubaldino Genio anticato
Allo Sacro Imperio Servo
Uco piede ad avaccearmi
Et con li mani aggrapiarmi
Alli corni suoi d'un tracto, etc.

The ecclesiastic writers, in giving an account of the struggle between Victor and Alexander III., tell us that the Roman people who favored the former ran about the street crying, "Papa Vittore S. Pietro l'elegge!" Now this phrase is entirely Italian, and would go to show that something very much like Italian, in 1160, was the spoken language of Rome.

Here is another anecdote: One of the historians of Milan, in relating the debates that occurred at the election of an archbishop, puts this exclamation into the mouths of the populace: "Ecco la stola! Ecco la stola!" Now, as this incident happened before 1118, the inference may be drawn that at this time there existed at least a vulgar dialect in Milan which must have been pretty fair Italian. One fact is incontestible: the Italian and Latin, as two separate and distinct languages, already existed in Italy as early as 960. This is shown by the letter of a certain Gunzone, published by Martene and Durand: "Vet: Scriptor ampliss: collectio tom 1, col. 294–295–298."

If we extend our researches still further back,—indeed, as far as the Xth century,—we find even here a considerable number of proper names the elements of which are pure Italian. For example, in Ravenna, in a document bearing date 983, the three following may be seen: Domenico Barbalisciado; Leozoppo; Dominico Tornafolio, In Modena another document exists in which the name of a certain Lambertus appears with the curious cognomen of *Cavinsacco,*—that is, *Capo in sacco,* In Verona, in an act drawn in 985, we see the name *Lupo supla in punio,* i. e., *suffiio in pugno.* In the IXth and VIIIth centuries proper names formed from vulgar words are not entirely wanting in the different acts, only they appear less frequently, Those oftenest seen are really common nouns used as names, which, despite of their Latin terminations, are actually Italian; *e. g.*, *Fertellus*, *Fuscarus*, *Muzuco*, and *Bonella*.

Here we have traced the language up from the first half-formed lisping of the infant to at least the intelligible babble of the child. When Dante was born there was no one common language in Italy; instead, only rude, uncouth dialects existed in every petty State. The Tuscans, to be sure, made the greatest pretensions to supremacy; but these Dante himself rejects, reproaching them for the baseness of their expressions, not less corrupt than their dress. Passing to the left of the Apennines, he treats no less severely the dialects cf Ancona, Vicenza, Mantua, Verona, Venice, Pado. He considers the dialect of Bologna simply as the least unworthy,—nothing more.

All of these dialects continued to revolve apart, — each in a little sphere of its own,—as long as they continued to be simply spoken. The poets of Rome created the language of Rome; the poets of Italy created the language of Italy. When the *Divina Comedia* was written the language of Italy was made.

THE FUNCTION OF THE NORMAL SCHOOL.

BY E. C. HEWETT, LL.D.

In this short paper I propose to touch upon a great many points pertaining to Normal Schools, but to discuss none of them extensively. I will rather raise questions and make assertions, — dogmatical, perhaps, but such as have grown out of my observation and experience,—leaving the settlement to others.

No one questions the necessity of schools, both to the rising generation and to the general well-being of society; and few comparatively, in this country at least, question the necessity and usefulness of our great systems of public schools, much as some are disposed to heap criticisms, wise and otherwise, upon them. But, in order to have schools worthy of the name, it is clear that we must have teachers fitted both by nature and by preparation to conduct them. The teachers, in a very true sense, make the schools just what they are, whether good or bad.

What, now, is a normal school? I reply, a school whose purpose it is to prepare candidates for the teacher's office, to enter upon their work. In my opinion, the question whether any given school is entitled to be called a normal school is to be determined by its aim or function rather than by any test applied to its methods or course of study. If its sole purpose is to prepare teachers for their work, if all its operations are carried forward to promote this purpose, it is a normal school. If its aim is other than this, or if the preparation of teachers is only one of several aims, it has no just right to be called a normal school. What rank it shall take among normal schools must be determined, of course, by the character and success of its operations; but these do not determine to what class it shall belong. What shall be admitted to its *curriculum*, how its operations shall be carried forward, what are the methods best adapted to accomplish its ends, — are questions about which normal-school workers will differ; but all should concede its claim to the title, if its work is directed solely to the end I have named.

In many discussions as to the proper work and methods of a normal school, there is one very common and very mischievous oversight. It seems to be taken for granted that there is, or ought to be, some one general pattern to which all normal schools should conform. We often forget that the circumstances of different normal schools, and the material with which they have to work, vary greatly. A little thought ought to show that the pattern of a normal school best adapted to a city, where all its students have taken the same course of study and have graduated from the same, or similar, high schools, must be very different from the best pattern for a normal school whose students come from all the territory of a large State, with all the various peculiarities pertaining to hundreds of widely separated schools.

Again, the preparation that is best to fit persons to teach in the systematically graded schools of a city must differ very much from that required by persons who are to go out and take charge of schools in the rural districts. It is very plain to my mind that we need different *types* and different *grades* of normal schools. Given the material furnished to any normal school, the length of time for which its pupils can be held for study, and the kinds of schools that they will teach, and these *data* must determine the work of that school. No one school can be, or ought to be, the model for all others.

A normal school ought to do anything and everything which are necessary to fit the given candidates for their given fields. Many of the questions about so-called academic and professional work,—the kind and amount of each, — must be settled by conditions. Given conditions should be regarded, and the voice of experience should be heard. In this way, our normal schools have grown up, — the ideal has been modified by experience ; and so, I think, they must continue, to a great extent, in order to give the best results. It is very easy to particularize points in which our normal schools have not conformed to some theory, or some ideal ; it may be freely admitted that many mistakes have been made, and much crude work has been done ; but, after all, the history of these schools in America is very remarkable, and it is one of which their friends need not be ashamed.

The first State normal school on this side of the Atlantic began in 1839, in the historic town of Lexington, Mass. It was undertaken as an experiment, and in the face of many difficulties and much opposition. Opposition and criticism have continued till today ; but, in spite of all, our normal schools have constantly grown, in number, in efficiency, and in the good opinion of the people. Conclusive evidence of the truth of the last statement is found in the fact that so many schools which have no just claim to it are ready to take the name of *normal*. In the early days of these schools it was not so,—the name had no money-value,—it was not worth stealing ; and those who were fairly entitled to it might well regard it a matter of sound financial policy to say nothing about it.

Note, again, that, at the same time that normal schools have been multiplying and growing in popular favor, the whole general subject of education has moved forward to a place in public estimation which it never held before. Are these facts merely coincident? or is there the relation of cause and effect between them? I submit the question confidently to any one competent to judge. The normal school, in some form, has come to be regarded as an essential part of the public-school system; and this is as it ought to be. These schools bear a relation to the life of the community altogether different from that of any other professional schools. The line of argument is this: The education of the young is an interest so vital to the well-being of society that the State must attend to it as a matter of self-preservation; properly prepared teachers are essential to any system of education; experience in this country, and in others, shows that such teachers are not forthcoming in sufficient numbers unless the State make provision for their preparation. Hence, State or municipal normal schools are just as truly and just as legitimately a part of the public-school system as any other part.

There is another reason why the State should render such schools independent of popular patronage for their support. The proper work of a normal school must insist upon such a regard for the elements of instruction, — such a patient and continued labor in the fundamentals, — as no school dependent upon popular patronage for support can afford to insist upon, at least in the present state of opinion on this subject. That school that makes a great show in the *ologies*, the *osophies*, and the *onomics* is the one to which the dollars of the multitude are likely to flow in the fullest current; but it need not be said in this presence that a top-heavy school of this kind is not the one best fitted to prepare our teachers. Only a school in some degree independent of present popular favor can afford to do the work that needs to be done.

Nor must the normal school, supported at public cost, be regarded as in any sense a public charity; it is as far removed from this position as the public school itself, and for the same reason. The State supports the public school for its own good; it should support the normal school because it is essential to the highest success of the public schools. In other words, the normal school demands public suupport as a measure of public economy. The State is spending millions for its public schools. Their one aim is to educate the people for the good of the State. Their efficiency depends upon their teachers. If these are utterly worthless, the whole investment is lost. Just in the ratio that the teachers are made efficient, in that same ratio the investment is secured. To make the teachers thus efficient, normal schools are established and supported. If, by the normal schools of a State or city, the teaching is improved ten *per cent.*, then the normal school is worth to the public one-tenth of the total amount expended for its public schools. This is the argument for normal schools at public cost; this is the sole reason why the existence of such schools should be demanded. Any benefits that they may confer on individuals are purely incidental.

Reviewing now, briefly, the points on which I have touched, I assert:

1. That good teachers are the great want of our schools,—nor is there likely to be a change in this respect;

2. That any school whose sole purpose is the fitting of teachers for their work is a normal school, and it is proper to confine the name to such only:

3. That, owing to circumstances, no one pattern of a normal school can be best for all,—that such schools ought to be of different types and different grades;

4. That the history of normal schools in this country has fully demonstrated both their necessity and their worth; and that it is fair to claim for them much of the credit for advance in education;

5. That normal schools should be supported at the common charge, because otherwise they will not be founded in sufficient numbers, and because they need to do a work which schools dependent for support upon popular patronage cannot do;

6. That such schools are, in no sense, public charities, but that the public should support them for its own sake, as a wise measure of economy.

Now, turning to the *work* of the normal school, a few words. From what has been said, it will not be expected that I shall try to set forth the kind of work, nor the amount, nor the methods, to which all normal schools should conform. And yet I think there are some fundamental matters in which all normal schools should agree. It has been well said that three kinds of knowledge are essential to one who would teach well: 1st, He should know the nature of the being to be taught; 2d, He should clearly understand the knowledge, the facts, or the subject-matter, to be presented to that being; 3d, He should know the method of bringing knowledge and being together, and the best modes of doing this work. In my opinion no normal school can afford to ignore any one of these three fields of knowledge.

If there is anything that especially marks the drift of recent educational thought more than anything else, it is the study of human nature, particularly in the child. We hear much now-a-days of the "new" education; but, as I understand it, there is nothing new about it except in the endeavor to become better acquainted with the child's nature and wants, and to have a wise regard for the same in his education. So far as possible, all normal schools should give their pupils a knowledge on these points as full and complete as may be,— nor should they be content to teach what is already known merely, but they should do much to increase the common stock of this kind of knowledge, and to put it in form for practical use.

Mental science, in its relation to pedagogy, must receive more attention than it does at present; but, of course, the knowledge of human nature of which I speak includes much more than mental science in any form. Nor do I believe that it will do to say, as some do, that the acquisition of the knowledge to be taught is wholly foreign to the *idea* of the normal school. I am not much frightened at the cry of "academic" instruction. Whatever may be our theories on this matter, it is certain that, as things now are, the acquisition of the knowledge to be taught must occupy much attention in our normal schools, if we would give the pupils who come to us what they most need. But, more than this, I believe that the subjects to be taught must be reviewed at least, and looked at in a new light by the candidate for the teacher's chair before his knowledge of them is in the most available form for imparting it to learners. I have not time to discuss the question now, — if it were necessary or proper to do so, — but I believe that this work of putting the knowledge of the school-studies into the proper form for the schoolmaster's use is as truly "professional" as any work that he can do. I doubt not that the study of the subjects monopolizes too large a share of the time in many of our normal schools; but, so far as I can learn, the best normal schools in Europe do not proceed upon the plan, sometimes advocated here, that the normal school should demand that all the *matter* of instruction shall be acquired elsewhere.

Of course, no one will dispute that the study of the method and modes of bringing the knowledge to be taught into the most healthful and fruitful relations to the mind of the learner should make up a large part of the work of the normal school. Nor will any thoughtful man deny that the wisest and most careful work needs to be done in the earliest stages. Men in other departments of life fully appreciate the importance of good foundations. It is strange that we are so slow to see the application of the same principle in the work of education.

Once more I say that it seems to me idle to attempt, or to desire, to make this common work of all normal schools take on one type or one form, as the best of all possible types or forms. And yet I think it very desirable that we should come to a uniform recognition of the underlying truths and principles involved in the work. In other words, we need to formulate for our own use, and to give to the world a "body of educational doctrine," or a " schoolmaster's creed," in regard to the fundamentals. If I mistake not, we are making good progress in this respect, but the work is, by no means, done yet; and it is the especial business of workers in normal schools to carry it forward to its completion.

Finally, let me say that the work of any school is very defective, as it seems to me, if it stops with the mere gathering and imparting of facts, of ideas, of knowledge, in these several departments of its work. It is the business of the teacher *to do.* There is but one sure way of gaining the power to do, — that is, by doing. Hence, training, practice, should be found in all the stages of the work of a normal school. In respect to the *work* of the normal schools, then, I assert:

1. That they should make their pupils acquainted with human nature,—in its capacities, tendencies, wants, and limitations, especially as these appear in the life of the child;

2. That the subject-matter of instruction should receive attention to any extent that may be necessary; and that I believe that the *ideal* normal school will not omit it altogether;

3. That the study of method and modes ought to make up a large part of the work of these schools;

4. That, while it would be foolish to attempt uniformity in detail, it is desirable that there be uniformity in adherence to underlying principles, and that a body of educational doctrine should be formulated and disseminated;

5. That the work of training, or practice, should have a prominent place in all our normal schools;

6. And, in addition to what has been said already, that every normal school should awaken in its pupils a genuine enthusiasm respecting the work of teaching, and a true professional feeling, or *esprit de corps.*

Are these assertions of mine true or false? Are there other things equally fundamental which I have overlooked?

How shall we best settle these questions, and others that may arise?

When we clearly see what we want to work out in our schools, how shall we arrive at better modes of working?

How shall we bring the truth that we know before the people so as to do them the most good, and to move them to give us the most assistance in our efforts to bless the coming generations?

MUSIC IN PUBLIC SCHOOLS.

BY H. E. HOLT.

Skill in teaching is yearly becoming more and more appreciated. Great changes and improvements in methods of presentation have been made, but, as in all other branches of study, the success of music in our public schools will depend upon the skill and proficiency of the teacher. No other subject is suffering more in consequence of unskillful teaching than that of music. This will continue to be the case until we realize that a special preparation for this work is absolutely necessary outside of a musical education. Unless we can furnish trained teachers from the musical profession to take charge of this branch of public instruction,—those who understand the true philosophy of teaching, and can direct the regular teachers intelligently in their work,—we shall see the teaching of music pass into the hands of the teaching profession. The public will demand better results than have been obtained, when it is known what can be accomplished. If the results of teaching music in our public schools have not been satisfactory, it becomes us to ascertain the cause and apply the proper remedy. Nearly all attempts to improve the teaching of this subject have been in the direction of simplifying the notation; devices for making it easy for the learner to acquire a knowledge of the *signs* of musical ideas rather than the ideas themselves are numerous.

The patent note system, where the shape of the note indicates its name; the letter or tonic sol-fa notation; also the French or figure notation,—these are all illustrations, showing the direction in which people have been studying to improve the teaching of music. I do not say that these devices have not been useful, but I do say that they have been useful only as crutches for lame teachers. The time has come when we should ascertain the best methods of *presenting* and *naming music itself*. When we do this there will be no difficulty with the notation. Too many teachers fail in getting a clear notion of what teaching music really means. To many teachers of musical instruments it means the teaching of certain signs and characters, and training the pupils to a skillful manipulation of the instrument. To such an extent have we become dependent upon instruments for our musical training, and so stultifying is the effect of having a musical instrument at hand to do our *thinking* for us, that we have become mere imitators of musical instruments. Only those who are positively musical by nature will learn, by playing an instrument, to imagine correctly how a piece of music will sound which they never have heard. There will always be differences of opinion with regard to the *teaching* and *naming* of sounds so long as there are two distinct mental processes by which a knowledge of sounds may be acquired.

To the learner, without the aid of instruments every sound has two names by which it is known,—the relative-name, which is the guide in singing, and the positive-name, used in playing musical instruments. If human beings could be *tuned* like musical instruments, to always give precisely the same pitch regardless of the *relation* of sounds, the relative name might be dispensed with. As this is impossible, we find ourselves obliged to *think* by the relative name, and use the instrument name or symbol for our representation. This is very easily accomplished by associating the instrument name with the name in singing, simply as a fact, so closely that the two become inseparable. Any device by which the teacher can hold the attention of the pupils, and keep them interested in the practice of relative sounds, will be profitable up to a certain degree of proficiency; after which all practice should be so conducted as to create a mental picture of the true representation of the pitch of each sound as it stands upon the staff. Nor is this at all difficult to accomplish when the process, which is very simple, is understood by the teacher. This subject has been taught in such a way as to give the pupil the impression that there were thirteen, more or less, different major scales to be learned. This has been brought about by teaching the mathematical construction of the scale in its different positions upon the staff, and by making a study of the *names* of these different positions the important thing to be known. In teaching this whole subject of singing at sight, we should teach the *simple faots, name them orally,* and give practice upon them before the representation is given; and when the representation is given, it should be a true one of all the ideas taught. A knowledge of sounds should be established by presenting, comparing, and *naming* them to the ear as *relative mental objects*, on precisely the same principle that the eye should be trained to number with material objects. We should never forget that in teaching music we are not only teaching that which we cannot see, but that of which we can give no idea by any picture or drawing. In teaching music we must deal with the *reality*. No idea of the pitch or length of sounds can be obtained by studying the characters which represent their pitch or length.

All knowledge of musical notation, or the names of characters used in representing either the pitch or length of sounds, is of no value so long as a conception of their pitch or length is wanting. In teaching singing at sight, we are teaching two conceptions,—a conception of the relative *pitch* of sounds, and of their relative *length*. A sense of rhythm or recurring accents can only be awakened and developed by hearing such rhythms or accents. When I think of the time wasted in attempting to reach the mind with music through the eye, making the study of music a drudgery and a thing to be dreaded, when it should be a source of the greatest pleasure and delight, a feeling of sadness comes over me which I cannot express. Not long since a lady, with large experience in teaching music in public schools, visited me in Boston to witness my manner of teaching. In speaking of the improvements made in teaching time, she said, "I don't know how many pecks of apples I have cut up to make the children understand the difference in value of the half, quarter, and eighth notes." Now this was a conscientious, hard-working teacher who no doubt intended to do thorough work.

Another teacher of large experience (and this was a gentleman) gives his youngest pupils all the different kinds of notes, from the whole to the thirty-second note, with their corresponding rests, together with the staff, clef, and letters on the staff, to learn first, as a preparation for singing. Another teacher would take the first half of the year to teach notation and theory, and the last half for singing. The lady above referred to, I learned, was a recent and very enthusiastic convert to the Tonic Sol-fa system, which, of course, does away with the necessity of cutting up apples. The gentlemen were not converts to that system. Now, I wish to say, in all sincerity, that if there are teachers of music in public schools who have no clearer conception of teaching the subject than these illustrations would indicate, and who are taking the precious time of little children to create a dislike for music by presenting the dry mathematics of the notation, they should do one of three things, — either learn how to teach, take up some other employment, or, if they must teach music and can do nothing else, why take the figure or letter notation. A thorough knowledge of educational principles and training in the true philosophy of teaching is of much more importance to the teacher than a thorough knowledge of music gained in the ordinary way without such training.

I would not be understood to undervalue the importance of thorough musical education. We need all the musical culture that can be obtained from all sources, but this alone, however great, will not insure good teachers. The teacher should direct the pupils in their thinking and practice, while they go on developing and gaining command of their musical powers until they gain command of the whole subject. What not to teach should be as seriously considered as the question of how best to teach the essential things to be known. The mistaken notion that it was necessary to teach the "complications of the notation" and the mathematics of musical theory, in connection with singing at sight, has been a great hindrance in teaching this subject.

To teach a proper use of the voice, and give pupils command of their musical powers until they acquire the ability to sing any composition of vocal music at sight, should be the aim and object of all instruction in music in public schools. Everything necessary to enable the pupils to do this intelligently should be taught, and whatever is not necessary should be left out until this ability is acquired. The great influence of music, morally, mentally, and physically, will not be fully realized until the time now wasted over the dry mathematics of the notation and theory is spent in keeping constantly before the mind by practice the essential things to be known, together with their true representations. There should be no questions or explanations on the part of the teacher that are not immediately preceded by the sound to which they refer. The pupils should be kept constantly doing, but this must not consist in working out the mathematical transposition of the scales or in writing scales. The scale should first be indelibly written upon the mind of the pupil by creating a mental picture of its true representation upon the staff through practice in singing it. No time should be spent in writing scales until the pupils can write them by hearing them. But I imagine some teachers will say that writing scales helps to fix them in the mind. My reply would be, that it helps fix the representation in the mind, but not the scale itself.

If a vivid mental picture of the representation of each scale, as it stands upon the staff, has not been established, either the practice has been wrong in quality or insufficient in quantity. The study of music, like everything, is dry and uninteresting to children when considered abstractly and theoretically; but it awakens the greatest interest when the mind is kept in constant contact with music itself. Our methods of teaching music must be brought into harmony with natural laws. Teachers who are familiar with educational principles and the true philosophy of teaching can be left to work out new methods and ways of their own, because they understand what they are doing. Three things are absolutely necessary to good instruction in public schools: (1) a proper use of the voice; (2) a knowledge of the relative pitch of sounds; (3) a knowledge of their relative length. I have placed these topics in the order of their importance, and in the order in which they should be taken up in teaching this subject. No part of the work is so important as the proper management of the voice. People generally have no idea of the charming effect of young, fresh voices when combined in part-singing, because they seldom or never hear them properly used. So keenly do I feel the importance of this subject, which is so far-reaching in its consequences, that I dare not commence a discussion of it here. I must take time, however, to say that we cannot expect to work any great general change in the use of the voice in singing so long as it is used so noisily and harshly in recitations in the school-room.

I am very glad to see in the June number of *The Century* an article by Mr. Tomlins, of Chicago, which shows a movement in the right direction. Let a proper standard of using the voice be once established in our public schools, and that class of "voice-builders," who are really voice-destroyers, will be obliged to seek some other employment. When I see the possessor of a naturally beautiful voice paying three dollars a lesson for having all the beauty and flexibility taken out of it, and substituting therefor a harsh, rigid, forced quality of voice, — in fact, everything sacrificed to compass and noise, — I must confess to feelings of sadness and pity. This is not an exaggeration, for I know of many just such cases. Childhood is the golden time for learning all studies, including music and the proper use of the voice. I am often asked at what age the voice should be trained. My reply is, if properly exercised in singing, the younger the better. If, on the other hand, the training is to be done by one of that class of teachers who seem to think that the Creator has made a grand mistake, and that everything is wrong from the start, and must be fixed by them before any progress can be made, the longer the training is deferred the better.

Upon the development of a conception of the relative pitch and length of sounds will depend our ability to sing. How shall a conception of the relative pitch of sounds be taught? In training the mind through the eye to a perception of color or number, there is but one process by which a knowledge of the things to be known can be acquired, while there is one uniform naming of the facts taught. If this were true of music there would be no difficulty in establishing a uniform method of teaching the subject the same as in color or number. The whole difficulty of teaching this subject has come from the confusion caused by mixing and naming what is known as *relative* and *positive* pitch. Before any real and general progress can be made in the teaching of this subject, two facts must be established: First, that all knowledge that can be acquired of what is known as positive pitch is of no practical value in singing at sight, any further than the convenience of being able to give the pitch of the key-note as a starting-point. Second, that an approximate knowledge of what is understood as positive pitch can be best acquired in singing through *relative* pitch, by always using a uniform standard and singing the music in the key in which it is written. Many have the impression that they sing by positive pitch, but such is not the case. Players of stringed instruments do not play positive pitch. Keyed instruments, like the piano and organ, play positive pitch and play out of tune. We must have a uniform method of *thinking* and *naming* sounds which shall make this whole subject perfectly clear to the mind without the aid of an instrument. So long as the methods of teaching this subject are to be influenced by musicians whose knowledge of music has been gained by hearing it through musical instruments, and whose only qualifications for judging in this matter are that they can teach or play the violin, or some other instrument well and can direct an orchestra, just so long will the teaching of singing in public schools be unsatisfactory.

No one question pertaining to the teaching of this subject has been so much discussed, and upon which so great diversity of opinion exists, as upon the use of the syllables. Shall we have a "fixed *do*," a "movable *do*," or "no *do* at all"? All these ways of using or not using the syllables have their objections. My position is this,—that all music is written upon the principle of the relation of sounds to each other; that all instruments are tuned upon it, and that singing must be taught upon that principle; consequently anything which prevents the mind from grasping this relation of sounds and gaining a clear conception of them must be avoided. The "*fixed do*" does this, and should not be used. On the other hand, to use the syllables as names of the sounds, and to practice singing with them as such until the singer finds it difficult to think or give the sounds unless he also thinks and sings the syllables, is narrowing in its effects, and prevents that freedom in thinking which every singer should possess.

The syllables are very useful in elementary teaching if properly used. They are also a stumbling-block and a great hindrance if improperly used. They are valuable in giving practice in singing different vowels and consonants, although better ones might be invented. They should be used synonymously with the *names* of the sounds, but should not be allowed to take the place of the name in thinking. If they are properly used, little children will outgrow them as naturally as they outgrow their garments. The science and art of teaching is in its infancy, especially as applied to the teaching of music. When the same attention and care is given to training the ear to sounds that is given by the best teachers in training the eye to color and number, we shall see a wonderful proficiency in singing. What little training has been given in sounds has been confined to a very narrow range. The scale should be the unit in thinking, and when a vivid mental picture of its different representations upon the staff is clearly established, the pupils should be taught to think instantly the relation of any sound to every key in which it is found. This makes the pupils familiar with the whole subject of modulation and transition, and is not so difficult to acquire as it would seem. We judge the ability of children to think music by our own when our training in thinking sounds has been very narrow and meagre, and our ability very limited indeed in comparison to what it would have been with a broad, systematic training.

A practical knowledge of the relation of sounds in all the keys can be more easily taught than the different combinations of numbers up to ten. How shall a conception of the relative length of sounds be established? This can best be accomplished by the use of a Time Language, which shall establish and *name* the various regular recurring accents, and name definitely the relative length of each sound in the measure. The idea of measuring the length of sounds by a time-language originated in France in 1829. As the scale should be the unit in measuring the relative pitch of sounds, so the measure should be the unit in thinking their relative length. The different mental effects in time comes from the varying accents. One sound standing by itself means nothing musically in either pitch or length. It must be associated with other sounds with which it can be compared before it has any meaning or pitch. It must also have an element of accent or pulsation associated with it before it has any meaning in length. A conception of these accents or pulsation should be established with the time-language before they are represented in notes. I am often asked if the children should beat time while singing. My motto is, One thing at a time ; first learn to *sing* in time, before you learn to *beat* it. It is the mind that makes the hand move ; the hand does not make or help the mind to act, and the making of a set of motions with the hand for each form of measure, called beating time, is not only useless, but a great hindrance. Formerly, when we considered the relative names of notes, and measured their value by beats, beating time was considered necessary. If the time-language is properly used it will do away with the necessity of first learning the fractional names of notes, and naming their value by beats.

When the sense of rhythm is well developed it will show itself. It will then be a very easy matter to beat time if desired. A very important matter connected with this subject is the examination. Examinations in music, as usually conducted, induce and encourage *bad methods of teaching*. They are usually examinations upon notation and theory. In many cases music is left out entirely. I know a city where the examinations in music have not touched upon the ability to sing at all. They have been examinations entirely upon notation and *proof-reading*. What superintendent or school committee would think of sending out a written examination to ascertain how well the pupils could read? And yet this would be sensible when compared with a written examination in *singing*. Just so long as a teacher knows that her reputation as a teacher of music, and the standing of her class, depends upon the per cent. of correct answers to be written out upon the transposition of scales, notation, and theory, just so long will they be very likely to get a hundred per cent. in their examinations, and know little or nothing about music. By music I mean sounds and their combinations, and not inventions for representing them. I would not be understood as ignoring the importance of a knowledge of the notation; while it is important, it is a secondary matter.

To spend time in teaching the names of characters used in representing musical ideas before the ideas themselves are established, is wrong. The names of characters should be learned incidentally by talking about them, in connection with practice. We have attached too much importance to the names of *signs* of things, and have lost sight of the things themselves. Not a single question need be asked about the notation that is not immediately preceded by the sound to which it refers. Apply this rule and you will keep the ear in training all the while; and if you know how and when to ask the questions, your pupils will not only *know* the notation, but can *sing* from it.

All the teacher can do is to guide the children in their *thinking* and *practice*, and the teacher who has not learned to do this has not learned the art of true teaching. I am inclined to think that the only limit to what can be taught children in music is the ability of the teacher. Dr. Lowell Mason, in his day, did a great work in spreading a knowledge of music among the people of New England.

Through his influence and others associated with him, New England, twenty-five years ago, could boast of more good readers of music than any other like area in the world. With the rapid increase in the number of musical instruments, and the large increase and importation of instrumentalists, that old New-England institution, the singing-school, which was the backbone of the strong mental growth in music twenty-five years ago, has been crowded out. I appreciate the great value of musical instruments as a means of advancing musical culture; there should be a good musical instrument in every household, but these instruments should not be used for "*cramming*" in music, and thereby prevent that mental activity and growth from within which comes from a proper exercise of the mind in thinking music rather than merely hearing and imitating it. Musical training in singing should precede and prepare the pupil for instruction upon musical instruments.

When on the assembling of any considerable number of singers (either children or adults) it is found necessary to disregard all arrangement of the singers that will enhance the vocal effects in order to accommodate a large orchestra, which shall constitute the chief attraction and upon which the conductor can depend to pull the singers through, something is wrong and should be corrected. Whenever an orchestra is employed in connection with chorus-singing, it should be subordinate to the singing, and if the singers cannot sustain themselves without the orchestra they should not appear at all. The foundation for independence in singing should be laid very early in life. This must be done in the public schools, and can best be accomplished by a short daily lesson; and in order to accomplish this successfully the regular teacher must be brought into requisition. To Mr. Luther Whiting Mason belongs the credit of introducing the regular teacher as the *teacher of music*, under proper supervision. Animated by a true Christian missionary spirit, he has worked incessantly with but one object in view, and that the good of the cause. His has been a pioneer work in the right direction. And it is in this direction that we must study to improve the teaching of music in our public schools. Then, with skillful instruction and supervision, music will soon take its normal place as a refining and elevating influence in moulding the character of the young.

THE TEACHER'S INFLUENCE.

BY GEO. J. LUCKEY.

The world is what we make it, and we are what we are by education. The organs of speech are alike in all people, and yet by education different nations speak different languages. The Chinese and the Russian hand down their peculiar dialects from generation to generation, and will continue to do so until the end of time, unless a stronger educational force from without shall compel them to accept a new language or a different dialect. The pecular habits, customs, and prejudices of every people are nothing more nor less than the result of education. The traditions of the fathers influence the children to the third and fourth generation.

Education leads the Englishmen to venerate his Queen, and the Irish Celt to hate the government under which he lives. It makes the Briton extol the name of Wellington, and causes the breast of every Frenchman to swell with pride when he recounts the daring deeds of the first Napoleon. It directs the Mohammedan in his pilgrimage toward Mecca, and brings the Jew to worship in the synagogue of his fathers. It moves the Buddhist to chant his sacred songs in the gilded temples of the East, and controls the Christian in his more rational worship of the true God.

We ask ourselves the question, Why do beings of a like nature and with the same faculties differ so radically in their political notions, religious views, and social customs? To this question there is but one answer; viz., the belief and actions of mankind are greatly controlled by education. Even in our own community among our Christian sects, we find, by investigation, that the dividing line is education. Our Episcopalians have had Episcopalian training; our Presbyterians have had Presbyterian fathers; our Methodists have had Methodist mothers; and our Catholics have been reared with priestly care in parochial schools. So generally is this true that we may predict, with reasonable certainty, what will be the religious belief of those who are yet unborn. For instance, no one will care to doubt the prediction that nine-tenths of those who will be born in the next decade on the sunny hills of Spain will be Catholics; and a like proportion of those who may first see the light on the Scottish soil will be imbued with the principles of the Reformation. Why will this be true? There is not enough in the physical surroundings of these people to indicate what will be the religious belief of their future generations; but knowing what will be taught, we can foreshadow the tenets of their creed, and predict the tenor of their rules of faith and practice. Let the religious education in these countries be reversed, and the next generation of Spaniards will read the works and follow the teachings of Luther, Knox, and Calvin, while the Mass would be celebrated in every Scottish kirk, and the image of the Virgin would adorn the walls of St. Giles.

What is true in the matter of religion is true in everything else. Our young politicians argue with warmth and enthusiasm for the doctrines of their respective parties, all believing that their convictions are based upon reason and investigation, while in fact they are but the bias of education. Their political opinions have been molded by home training. Had the Republican been reared by a Democratic uncle, or had the Democrat been sheltered beneath a "Stalwart" roof, their politics and convictions would have been reversed.

To the casual observer it might appear that this rule does not always hold good. In the realm of mind, as in the realm of matter, we find sudden and unaccountable changes, great revolutions in thought that compare in grandeur and sublimity with the physical eruptions whose footprints we find in the deep cañon, or penciled in rugged outline far up the mountain-side.

The great convulsions of mind and matter are not outside of law and rule, but are as surely the results of a cause as are the more common occurrences of every-day life. Take, for instance, the reformation of the sixteenth century, when whole communities and states and nations, almost as one man, changed their creeds and customs, and it will be at once conceded that this mighty revolution was but in obedience to the general rule, that men are what they are by education. The new doctrine, though having its vague inception far back in the recesses of hoary centuries, under the general rays of brightening ages, at length broke through the eyelet of its secret spring, and gathering strength in its onward flow through the confines of awakened thought, at last swept before it with irresistible force every vestige of opposing error and superstitution.

The education of an individual, or of a community, is a much more rapid process to-day than it was in the ages that are past and gone; Then the only educating agencies were the church and the family; then the thoughts, the convictions, the customs, and the prejudices of a generation were almost exact duplicates of those of preceding ages; but to-day we have so multiplied the educational forces that it has become possible for individuals and communities to be entirely changed in their customs, habits, and convictions in a single generation. The invention of printing makes the thought of each individual the common property of mankind; the telegraph daily brings into every household the important doings of all nations; and the improved modes of travel make it possible for us to visit the remote ends of the earth, and for people of different climates and languages to mingle together and learn from each other. But we must not suppose that the open, visible, and recognized educational agencies are the only ones that influence the belief and actions of mankind. From the cradle to the grave our opinions and actions are, in a considerable degree, molded and controlled by a thousand subtle agencies; they are influenced by the words and acts of our companions in childhood, by the mountains that encircle our homes, by the rivers upon whose shaded banks we hold our childish sports, by the storms of summer, by the snows of winter, and by the delicate flower that sheds its perfume on the gentle breezes of spring-time. But of all the educational agencies, there is no one that exerts so powerful an influence upon the human mind as does the professional teacher. In his hands is the destiny of the American people; to his care has been committed human liberty and free institutions, and he should be prepared to accept the responsibility which the people, the nation, and the nineteenth century have imposed upon him. This great nation was not born of chance; the principles of free government were not the discoveries of a single generation; the love of liberty and the hate of tyrants were the results and outgrowth of a long-continued process of education; thought was quickened by perception, cultured by hardships and suffering, and ripened amid scenes of carnage and bloodshed. The result of this education of our fathers is a nation of freemen. As it was developed by education, so must it be preserved by education; and under our peculiar system of government the chief responsibility for its preservation has been placed in the hands of the public school-teacher; hence the necessity that the teacher should realize his responsibility, and that he be thoroughly prepared for the great work in which he is enlisted. What shall be the nature of the preparation?

He should have a sound body. I know that great things have sometimes been accomplished by men whose souls have been confined in fragile shells, but the rule is the other way. A forest tree, planted in the crevice of a rock, may sometimes be the peer of its more fortunate neighbors in the valley below, but yet men do not search for the finest timber upon the rocky hillside. The fruit from the blighted apple-tree may, in the distance, look red and luscious, but on close inspection you will find the marks of disease plainly written in the core. The work of the teacher is of such a nature that it will soon destroy a sickly body; and he who possesses an unsound constitution, if he values life, should never preside at a teacher's desk.

Accompanying a healthy physique the teacher should have a cultured intellect. By this I mean more than a knowledge of books. Side by side with his knowledge of mathematics he should have a knowledge of the world; underlying his knowledge of geography should be a knowledge of mankind; and above and beyond his knowledge of science and astronomy should be a knowledge of Him who made all things. The teacher is the pupil's model, and this model should be as perfect as it is possible to have it. Every word spoken, every motion made, every action performed by the teacher, has its part in the education of those placed in his charge. If the teacher is uncultured in expression, the pupil will imitate him; if he is rude and awkward in his manners and movements, the pupil will be like him; if he is drowsy and slow in his actions, the pupil will incline to be dull and stupid.

The teacher should be a student of child-nature, and have a heart big enough and good enough to furnish sympathy in every childish sorrow; he should possess a centripetal force which should draw every individual pupil toward him, and this force should be strong enough to reach out over fields and hills, through streets and alleys, to every home. He who possesses the opposite repulsing or centrifugal force can never be a teacher; he may keep school and draw a salary, but he cannot be an educational force. The true teacher must not only understand science, but he must know himself; and his ability to govern and control others will depend largely upon his ability to control and govern himself. A man may have a sound body and possess good literary attainments, and fail as an educator for want of enthusiasm. To be a successful teacher he must have unbounded zeal in his calling; he must realize the great importance of his work; he must feel that he is engaged in making citizens of a great republic, in making mankind better and in helping his little corner of earth to be happier and purer.

The American teacher can follow no model,—his work is different from that of all who have gone before him. In older countries the teacher supplements home-training, and home-training is a well-defined, definite, positive quantity. Here the teacher's work is not supplementary, but original. We are building a new nation; we must take the different people from all nations and climes and mould them into a new nationality; we must change their language and their customs; we must teach them to love another flag, and wean them from the graves and traditions of their fathers; in short, we must transform them from serfs to sovereigns, from slaves to men. If we are successful in our work, the future historian will record the existence of a nation more populous than ancient Rome and more cultured than Greece. If the Roman forum gave law to the world, and the gardens of Athens furnished her with models of art and oratory, may it not yet be said that the American school-house gave liberty to human-kind? Whatever this great Nation is to be in the future, whatever blessings are to be bestowed upon the human family, the public school must largely determine.

Already the public school has done much to make mankind better. In it the children of all denominations and parties form a common brotherhood. The walls of prejudice and hate, which divided our fathers into hostile sects and parties, have been leveled to the earth, and only imaginary lines are felt instead. Those who in youth sit at the same desk, play at the same games, and recite in the same classes, cannot and will not be enemies in manhood.

The rack, the thumb-screw, and the stake might flourish when education was in the hands of sects and clans, when love was circumscribed and hate was universal, but they can have no place where dividing lines between sects have been obliterated, and where the human family constitute a single clan, unbounded by color or nationality. The question of the Great Master, asked eighteen centuries ago, Who is my neighbor? is answered to-day in every public school in the land, in the teaching that,—Every man is my neighbor; no matter where he is born, no matter what his political belief or what his religious opinions: if he bears the image of God, he is my neighbor.

WHAT HAS BEEN DONE FOR EDUCATION BY THE GOVERNMENT OF THE UNITED STATES;

OR,

OUR NATIONAL GOVERNMENT THE FRIEND OF THE VIRTUE AND INTELLIGENCE OF THE PEOPLE.

BY HON. JOHN EATON, LL.D.

The chaos of darkness began to give place to order when God said, "Let there be light." Whether or not this command became a law for all future events, it appears clear that all great forward movements of mankind have been inaugurated by some measure of obedience to its purpose. The establishment of a free government by the fathers of American liberty was no exception. Out of a decent respect for the opinions of mankind, they declared to all the world the causes that impelled them to the separation. The principle thus illustrated, though sometimes obscured, has been followed by the Government of the United States to our day; and may we not add, because of this we still exist as a free people? Our government of liberty, by the people and for the people, is believed to be one of reason and conscience, and it is held that it will have the support of the hearts of mankind when it receives the approval of their judgment. Resting on the intelligent and virtuous choice of its own citizens, this government proceeds upon the idea that it is concerned in their virtue and intelligence, that it must take the people into its confidence, and that they must know it and understand it to perpetuate it. To many the General Government is so remote, so far away, so indefinite, that they think of it only as naturalizing foreigners or making treaties or conducting wars, collecting our customs, distributing the mail, and having a President and Congress. Even the instruction in our schools concerning the Constitution of the United States is too often devoid of any adequate or clear specification of its manifold responsibilities or of its many blessings.

The teachers and educators of the country should know how to avail themselves of all forces at their command to aid themselves in making sure the intelligence and virtue of the people, and thus assure also the great good committed to this Government for this and other lands, for this and all coming generations. In considering what has been done by the Government of the United States for education, and more from convenience than from scientific accuracy, I choose to speak first and mainly of what the National Government has done indirectly for education, and secondly and briefly of what it has done directly.

I invite attention to the indirect influence of Congress, the law-making power. Every man taking the oath of civil office is bound by supreme allegiance to the constitution and laws of the United States. Thus through all the land is not only taught the supremacy of the laws of Congress, but the solemnity and binding character of the oath are emphasized by the great moral weight of the Nation. The Senate, so far as it participates in what may be called executive administration, acts in secret session; otherwise Congress does its work with open doors, nor does it deliberate without records, nor does it trust the recording of what it does to other agencies. The account of its doings, its daily journals, and the *verbatim* reports of its proceedings are available to tell the people in the remotest corner what their representatives are doing, and every well-conducted debate is a source of enlightenment to the people. The great number of bills on a vast variety of subjects offered each session, which some attempt to ridicule, illustrates the immeasurable number of public interests demanding consideration by its members, and is fitted to convey an idea of the importance of congressional position, and in time to create a demand among the people for the highest order of character, fitness, and attainments. The work of its numerous committees often taxes experts in science to their utmost. The direct distribution of documents by members is enormous and has a vast informing power, however many may be wasted. Two sets of congressional publications are given by law to libraries in each congressional district, to be indicated at the discretion of the member; thus there is placed in every part of the land, even in far-off Territories, a record of the course of public affairs, for the examination of inquirers. Under Congress, too, there is a great library containing 480,000 books and 160,000 pamphlets for its own use and that of those within reach of the Capitol who desire its aid. The neglect to provide a proper building for this great source of instruction to the country, points at once to its greater possibilities and to defects in congressional action. Here the librarian administers the copyright law, so stimulating to literature and encouraging to authorship, according to which 12,297 books alone were entered last year. Even for artistic works, which the ordinary visitor to the Capitol passes by with a hasty glance or a disdainful weariness, the national Congress has expended considerable sums of money. Now and then there may have been reason to complain of haste, of ignorance, of partiality; but the intention of the Government has been almost always good. The paintings, statues, and busts which adorn the Federal City's public buildings and squares have cost more than $900,000. Powers, Greenough, Crawford, Rogers, Brown, Launt Thompson, Healy, Trumbull, Moran, and other great names are represented in this array of plastic and pictorial beauty, wherein the sages and heroes of the republic are preserved to us, though their bodies are dust, so that their outward appearance may fortify the lessons of their wisdom and valor.

But this is not all. The public buildings of Washington are large and magnificent; the architect of the Capitol and the architect of the Treasury may well feel proud of the stately piles that, while they shine in the free sunlight, testify to the wealth and grandeur of the nation. But the public buildings in Washington are a mere drop in the bucket, compared to the numerous and noble structures scattered over the country, already erected or now building. The United States court-houses and post-offices in almost every large town and the custom-houses and marine-hospitals in every port are solid witnesses of the care, taste, and attention expended for the suitable and orderly conduct of federal business. How much these buildings have done to improve and chasten the public taste, to create a desire for beautiful and durable private and corporate architecture, can hardly be imagined.

The close connection into which Congress is brought in making laws with the veto power of the President and the decision of the courts illustrates before all minds the greatly needed principle, of universal application in human affairs, of self-limitation and self-restriction within properly defined limits. You will recall the extent to which the House of Representatives has sometimes been carried in the heat of excitement, in the assertion of what were its rights as against those of the private citizen; but when a case involving this question was brought before the Supreme Court of the United States, the constitutional line was laid down and clearly enunciated, and when next a proposition of this kind was made, infringing the rights of the citizen, a reference to this decision was enough to arrest action and point out the folly and wrong proposed. It would be impossible to tell how much all our ideas and habits of justice are affected by the decisions of this court, as they are enforced through the circuit and district courts of the United States system and the administration of the Dept. of Justice. How speedily would their mal-administration corrupt the very fountains of justice throughout the land! In many causes the State courts are final, and many of them are pre-eminent in their judicial character; and yet it is not too much to say that the United States courts affect the administration of justice through all grades of courts, down to that of the lowest magistrate. No one can study our Supreme Court without a feeling of profound admiration for its high character and of gratitude for its wisdom and justice, even though occasionally it may commit the error of giving an extra-judicial opinion. What a mass of legal literature is coming from these courts for the information of the bar, the law schools, the public press, and the people!

The President, chosen directly by the people in their action by States, is in a peculiar sense to them the embodiment of the national idea. They desire to see him, to speak to him, to shake his hand; and in spite of the laugh that some would raise at the expense of this widespread feeling, there is in it a solid good, closely connected with the most self sacrificing and heroic patriotism. The people,—yes, the common people, as some are fond of saying,—understand the purpose of those who would shut the President within the walls of the White House and never permit him to go abroad among them. They desire his visits to their States, their cities, their vocations; they want to feel the inspiration to patriotism and nationality awakened by him as by no other presence. Thus, when the President speaks, when his messages are sent to Congress, the intelligent of all classes want to read what he says, and those newspapers that may entertain the most bitter feeling toward him are in a sense compelled to give his words, even though it be in a garbled form. Study the difference between his communications and those of the head of any other form of government, and you get at the very essence of the excellence of our free institutions. Take, for instance, the President's messages and accompanying reports from the several cabinet officers at the beginning of Congress; how full they are of facts, of light upon the course of our public affairs, compared with the ex-cathedra, dictatorial utterances of a king or queen or emperor or czar! The people feel that his messages, though addressed to their representatives and senators in Congress assembled, are really addressed to themselves, who are the power behind all other powers in our form of government.

Through the State Department is carried on that portion of the administration under the President which is directly connected with the United States Ministers in foreign countries, and the representatives of those countries accredited to the United States; also the correspondence between the President and the several States. It has the custody of the great seal of the United States, which is affixed to various public documents. Here are preserved the treaties and laws of the United States. Here all applications for passports are made. Through this Department the American people are expected to know officially the rest of the world. It has an invaluable collection of portraits of eminent public men, a diplomatic library of great value, and is charged with the custody of some of our most important archives. Here is a large collection of the papers and letters of George Washington, including that remarkable diary of his boyhood, the whole costing $45,000; here are the papers of Jefferson and Franklin, and of others hardly less valuable, but impossible to enumerate. As early as 1818 this Department was authorized to purchase for distribution, at a cost of $5,600, Seybert and Pitkin's Statistical Annals and Commercial Statistics. Dr. Seybert says in his preface that at that date the documents annually presented to Congress are contained in more than 120 volumes, and are too much diffused to be made the subject of immediate reference. Through this Department, too, the country was put in possession of copies of the journals of the Federal Constitutional Convention and of the secret journals of the old Congress, and, at a cost of over a quarter of a million dollars, the documentary history of the Revolution. Not alone the private wealth of Astor, but the State Department, aided in the production of *Audubon's Birds of America*, that pride and glory of American naturalists. It has often been wondered why the first great World's Fair, held in London in 1851, produced so slight an effect upon the United States. The reason becomes obvious when it is known that the State Department was not authorized to participate. On the other hand, our new and enterprising affairs received such an impetus from the exhibitions in Paris in 1867, Vienna in 1873, and Paris in 1878, because the State Department was authorized to take charge of American exhibits, to employ experts to examine and report their lessons and to print the same, the whole at a cost of from $160,000 to $200,000 for each exhibit. Well-informed Americans glory in that great work, *Wheaton's International Law*, but it is doubtful whether its publication would have been possible had not the Government aided it through this Department. Through it also our people had the benefit of the London International Statistical Congress in 1860, and of the similar Congress in St. Petersburg in 1872, the published reports of which, in the possession of our libraries, have done so much to shape our progress in statistics the last twenty years. Were it not for this same agency, also, that able educator, that preëminent student of penology, that ardent and successful reformer of prison affairs throughout the world, Rev. E. C. Wines, D.D., LL.D., would not to the credit of American philanthropy have led the organization of International Prison Congresses held at London and Stockholm, nor could he by his publications, moreover, save as made at public expense, have shed the light of those great gatherings upon every prison administration in every State and county in the Union. From the same source we have also, in addition to its valuable reports, a series of bulletins containing the reports of our consuls from all portions of the world, so valuable that they are sought in every center of commerce and learning.

How many think of the Treasury Dept. only as a great, strong box, which receives and holds the nation's treasure, and from which is paid out the money for the carrying on of the Government. Here, too, the great informing principle is applied. The methods of accounting, devised in the main by Hamilton, are undoubtedly not excelled in their fitness to show clearly every transaction, either to give proof of honesty or to expose dishonesty. Many jokes and anathemas are thrown at what is called its red-tape; but when there is just complaint that its methods are offensive, it may be well to inquire whether a spirit of officialism, so hateful in itself and justly so offensive to the American people, has not taken possession of some clerk or officer instead of there being any fault in the system itself. A computation has been made by experts of the losses in handling public moneys of the United States from June 30th, 1861, to July 1st, 1879. The amount handled in this period, including receipts and expenditures, reached the enormous sum of $31,500,000,000, and the losses, though there were five years of war during the period, reached only forty-six cents in a thousand dollars.

What financial administration of the States or cities, or of our banks or other great commercial affairs, can compare with the administration of these vast funds in security and absence of loss? Hence it is only fair to say that here is taught by example, as nowhere else, the administration with scrupulous fidelity of public and private trusts. Introduce corruption here, and how soon it would spread through all our affairs, and public and private confidence would take flight. It should be observed that, while the accounts of all forms of service are settled in the Treasury, this honesty and preciseness must necessarily be shared by every officer charged with the responsibilities of expenditure; and while I speak of it in connection with the Treasury where the records are kept, I would point with emphasis to the fact that it is equally characteristic of the service where these records are made. Here the national banking system is administered,—so admirable that no one need ever lose a dollar of issue, and so instructive of honesty compared with the "wild-cat" systems, long prevalent in different parts of the country. Here, too, coinage is managed. The memory of mankind cannot recall the date when the educating power of coins was not understood, and the chief evidence we have of certain rulers and epochs is to be found on their coins. How did the emperor of France familiarize the eyes of the world with himself by the napoleons which he made popular as a coin, even where he was despised! Who shall say how much of national and patriotic sentiment is taught by our money, either in paper or coin, bearing the national impress? Yet we cannot fail to lament that we should ever have fallen into error as to the relation of paper to coin, or of silver and gold to each other. But along with the use of coin comes the most effective service for the detection and punishment of counterfeiting in all its forms, operating freely without reference to boundaries or peculiarity of State laws, punishing the most notorious criminals, thus aiding in teaching the perils of crime and in protecting all communities against its depredations. Here also is the record of all securities outstanding against the United States, upon the accuracy and fidelity of which their value depends, whether in the hands of orphans and widows or banks.

In the Treasury, also, is administered the light-house system that dots our coasts with those lights and other signals that warn those who go down into the sea in ships against the perils of death that would otherwise await them. Here, too, is the Life-saving Service that has its stations upon all our shores specially perilous to navigators, and where, by the skill of science and art and by heroic endeavor, so many lives are saved from watery graves. Here, too, is the Marine Hospital system, by which a hospital for sick sailors of every nation is provided at every one of our considerable ports, whether on gulf or ocean or lake or river. In this Department are supervised all the public buildings erected in the different States by the United States. Here, too, is found the National Board of Health that has taught us how the whole people may be protected from the terrible plague of yellow fever; how much security there is in a formal, careful, and correlated system of quarantine in all our ports; how all epidemic and contagious diseases can be staid by a hand that stretches over the whole land and brings into coöperation all other agencies of State or city. Here, too, is operated the Customs Marine Service, with its force of officers and men and a great school of navigation with its fleet of vessels.

We must not omit the Coast Survey, recommended by Jefferson and Gallatin, which has been made immortal by Hassler, Bache, Pierce, Patterson, and Hilgard. Here are kept the standards which determine the weights and measures used throughout the country. Here exact mathematics and chartography find inspiration. By the nicest processes and instruments of precision, our coasts and harbors are surveyed and mapped. In the reports of the office nearly 200 articles have appeared on subjects pertaining to geodesy; about 130 on tides, currents, and winds; 60 on terrestrial magnetism; and a long list on the Gulf Stream, deep-sea soundings, the measurement of heights, surveying, astronomy, and miscellaneous subjects. It has issued some invaluable volumes of the *Coast Pilot*, and has in course of preparation a magnetic map of North America and a general map of the United States, compiled from the precise data acquired from its surveys.

But what can we find in the way of contribution to education, either direct or indirect, in the War or Navy Department? The horrors of war no one has yet adequately described. The spirit of war and of a standing army or large navy on a war footing is hostile to the fundamental ideas of our liberty; but a nation conducted in the spirit of non-resistance could find little chance for standing among other nations of the earth, even in this the nineteenth century of Christian progress. The theory of our Government appears to be that the army and navy shall be the least possible, consistent with the protection of our frontier and of our commerce, the suppression of sudden violence, and the supply of officers, should the emergency of war arise.

Through these Departments all the improvements are kept under observation in the conduct and organization of armies and navies throughout the world. Through them also these ideas are disseminated for the benefit of the militia in all the States and for the preparation of merchant-marine. In the purchase of their supplies, great systems of tests are maintained by which the qualities of food, clothing, and medicines are determined. The Commissary Department of the Army publishes a cookery-book for the use of the camps. In the Quartermaster's Department the veterinary surgeon may get some of his best information. The Corps of Engineers is busy with questions of fortifications, torpedoes, bridges, surveys. In it is the science which directs the improvements of our rivers and harbors and lays out our military roads. The Ordnance Corps is busy with questions that apply to all munitions of war, and lays under contribution the most advanced attainments of science touching all its affairs.

The army furnishes a trained officer for instruction in military tactics in many of our colleges. The Surgeon General's office has placed, not Americans only, but all nations, under obligations for its efforts in behalf of surgery, anatomy, hygiene, and all departments of medicine and sanitation, and the introduction of humane appliances for the relief of the horrors of war.

Take the publications of the War Department. People suppose usually that these comprise the annual reports of the Secretary, the commanding general, and the heads of the staff corps, and that the information given is necessary, but very meagre and very dry. Now nothing in the world can be further from the truth than any one or all of these suppositions. The annual report of the War Department of late years fills from three to five octavo volumes. Besides the general account of the condition and movements of the army during the year, and in addition to the ordinary statistics about the cost and quantity of subsistence stores, means of transportation, medical supplies, and similar topics, it comprehends an account of all the great engineering works under the charge of engineer officers; it contains a yearly study and careful analysis of the weather by the Signal Office, and wise hints as to the kinds and causes of disease in every camp from the Rio Grande to Maine. But the annual report is not the only publication of the War Department. The Secretary has for years been acquiring, classifying, and printing materials for the history of our great war, written by men who were eye-witnesses and participants in the incidents they relate. The Surgeon-General's Office has published several superb quarto volumes of the medical and surgical history of that war, and three or four large octavo volumes of the subject catalogue to the matchless medical library of that office. The other scientific corps of the army are methodically producing treatise after treatise and report after report. Think of Rodman's labors in the Ordnance Bureau, of Comstock's survey on the northern lakes, of King's and Wheeler's surveys in the great West! The Signal Office publishes a daily weather map, containing a short account of the weather for the last twenty-four hours, a delineation of its actual condition as to humidity, temperature, and wind, for the whole Union, and a prognostic of its probable character for the coming day. It is hard to say how many billions of agricultural and marine property this weather map has saved in the last fifteen years. What we can say is that almost every who sees its friendly green expanse at his post-office every morning governs his proceedings by its advice; ships sail or keep safe in port, crops fall before the reaper or stand untouched, according to the encouragement or warning of the War Department weather map.

Examine for a moment what the Nation has done for science in connection with the Navy Department. The *Nautical Almanac* has appeared for every year since 1855, costing from the beginning of the work in 1849 to 1876 more than $557,000. The study of meteorology, or the rules and incidents of weather-changes, was prosecuted between 1848 and 1860 at a total expense of about $24,000. Astronomy has been sedulously fostered since 1844 by the foundation and support of the Naval Observatory at Washington, which has been adorned by the labors of Matthew F. Maury on the study of the Gulf Stream; of J. M. Gilliss, in connection with the astronomical expedition to Chili; of Simon Newcomb, in the late transit of Venus; of Asaph Hall, in the discovery of the satellites attending Mars; and by the equally useful, though less known, labors of others. Here is the finest astronomical library in all America, numbering 6,000 books; here, too, is the great equatorial telescope, twenty-six inches in diameter, for which, with its tower, dome, and other appliances, the Government paid more than $65,000. Education of naval officers and engineers cost the Government, between 1848 and 1876, $3,248,000, and the grounds and buildings at Annapolis used for this purpose cost $97,000 more. Geography is enormously indebted to the many ocean and inland explorations conducted by officers of the Navy. Remember how Charles Wilkes, between 1838 and 1842, discovered the Antarctic continent and many islands in the South Seas; how Ringgold and Rodgers, between 1852 and 1855, explored the Pacific from Van Dieman's Land to the Aleutian Islands; how Lynch penetrated the rivers of West Africa, and explored the Dead Sea and the Jordan; how Herndon and Gibbon explored the Amazon in 1851 and 1852; how Surgeon Kane pierced the icy solitudes of the Arctic seas in 1854; and how Commodore M. C. Perry, about the same time, unlocked the mysteries of Japan for the modern world. From the collections made by these fearless explorers the National Library of Congress, the National Museum directed by the Smithsonian Institution, the botanical gardens of the country and the world, commerce, art, and science generally have received an immense impulse. Nor should the labors of Dr. Charles F. Hall of the "Polaris," and Lieut.-Commander De Long in the "Jeannette"; of Ammen, Shufeldt, and others, on the Isthmus, be forgotten. Naval officers have charge of the four training-ships that are doing so much for the improvement of the mercantile and naval service by forming a superior class of sailors. Naval officers are on duty in the Light-house Service, the Coast Survey, the Smithsonian Iustitution, the National Museum, and the Fish Commission. Officers of the American Navy have helped to reorganize the navies of Germany, Egypt, China, and Japan. In several colleges, naval officers are detailed to give instruction in marine engineering. Besides the annual reports to Congress, the Navy and its bureaus have prepared and issued more than five hundred professional volumes and pamphlets, embracing all the general subjects heretofore mentioned, and treating numerous topics of the greatest scientific interest in the most comprehensive way.

General Grant, when President, was fond of calling attention to the educating influence of the postal service. No teacher fails to tell his pupils of the advantages of letter-writing, and the post-office makes these benefits possible and multiplies them. How has this service responded to the improvements of the period in facilities and cheapness? The letter that required twenty-five cents for transmission a few years ago, if sent several hundred miles, now costs two cents, and will soon require but one cent to any part of the land. The rapidity of transit keeps pace with the improvements in travel. Go where you will in United State territory where citizens live and do business, and there is the mail of the United States. On postal trains, assorted as they fly; in cities, protected in chariots or placed by careful carriers in the very hand of the one addressed; again, in pioneer regions, it travels in coaches or on the backs of mules or packmen,—thus reaching every hamlet, thus penetrating every center, however great and populous, and every region, however remote and solitary, if inhabited by an American citizen. This universal presence of the United States mail, meeting the traveler on every train, or steamboat, or stage, and at every station, gives one something of the impression of the ubiquitousness of Providence,—carrying messages of business, of love or sorrow, of pleasure or pain, together with the newspapers and books, or other forms of the printed page in packages, in a single year numbering in the neighborhood of two billions and a half.

The Interior Department, one of the last cabinet offices established, as might be expected, has manifold methods of contributing to the education of the people. Here is the Land Office, where are held securely the records of the titles to the lands in the newer States. The difference between the titles thus derived and those obtained by old colonial and other methods, is too well-known to need description. By this office the great precept is enforced, "Remove not the old land-marks," which has so much to do with the value of property and the peace of communities. This office, by its system of surveying the public domain, has furnished a vast amount of information, has guided immigration and settlement, and by its system of maps been a great instructor in the geography of our country, for our own people and those of other lands. The Pension Office illustrates the regard by our Government for those who rendered it faithful and efficient service in war. The hundred millions appropriated annually at the present time for pensions, show at least that republics are not ungrateful. The Patent Office may be said to lead the world in the excellence of its methods and its power of stimulating invention of new devices, useful to mankind. Here are stored the models and the drawings and specifications of the patents granted from the early times,—how instructive to the hundreds of thousands of annual visitors! Here is the first invention that led the way to the great profit in cotton raising, and those that mark improvements in the manufacture of fabrics of wool or cotton, and machines of iron and steel and wood. What stories they tell of the human brain! What way-marks are they of human progress! From this office is issued also weekly a bulletin of patents granted, illustrated with drawings and fully described in the text, which are systematically distributed through all the congressional districts. For its own technical use and that of those seeking similar information, it has a library of over 40,000 volumes relating to science and its applications.

Here also is the administration of Indian affairs, in which there has always been a quasi acknowledgment of the advantage of educating Indian children, but by the indirectness of the methods adopted and the general indifference to the subject till within a recent period, the large sums expended are no indication of the meagre results secured. But since the whole policy was changed by General Grant, there has been a steady advance in the care with which all expenditures for Indians have been made, and a larger proportion of them have been devoted to education. Under Mr. Schurz a notable step, led by Captain Pratt, was taken in the direction of industrial education, at Hampton, Va., Carlisle Barracks, Penn., and Forest Grove, Or. The present Secretary, Hon. Henry M. Teller, in connection with the Commissioner of Indian Affairs, has endeavored to turn the great Indian expenditures almost wholly in the direction of education, declaring that if all the Indian children for a few generations could be educated, not merely in books, but industrially, in matters of conduct and behavior, and prepared for the discharge of the daily duties in life, our Indian difficulties would pass away and Indian wars cease forever. How much these efforts for the industrial education of the Indian have done to inform educators and the public generally of what is possible in this department of instruction, is beyond my power to tell. These experiments shed a flood of light upon what could be done for the education of the children of the colored people, now almost wholly neglected on the remote plantations.

Through this Department, it should be observed, the General Government keeps up its connection and discharges its responsibilities with reference to the territories. Here the reports touching all the features of their administration, including education, are received and published.

In this Department, also, is the administration of the great Geological Surveys that are employing such a large number of scientists, and doing such a magnificent work, both in the States and territories of the country, out of which comes such a vast amount of material, instructive to the people of the land in topography, geography, mineralogy, climatology, and various other departments of science that so closely connect themselves with every-day life. Their reports, full of scientific observations and information, most carefully compiled and illustrated, are an acquisition for any library.

The census, which was at first in the State, is now in the Interior Department.

Having their connection with the Government, through this Department, are various interesting institutions in the District of Columbia,— the Washington Asylum, the jail, the Reform School for Boys, and the Hospital for Freedmen, from which the Medical Department of Howard University derives such important clinical advantages. Through this Department, also, the National Deaf Mute College has its connection with the Government, and receives its annual appropriation of fifty thousand dollars, which entitles each congressional district to the education of its representative deaf mute after he has been sufficiently taught in his State institution. This college,— let it be said to the honor of its founders, and to the honor of Congress,— is the first institution in the world to furnish this grade of instruction to that class of unfortunates who must live apart in their own world of silence shut out from communication with their fellow-men through that marvelous medium, the human voice.

In this Department the Bureau of Education has its official home. Thus, without any special transition, I come to speak of what the Government has done directly for education; and if space permitted, it would be interesting to return to many offices already mentioned, and trace the instruction that goes out from them directly for the benefit of the people. At each library of Department or Bureau we should need pause to describe the cataloguing and indexing, and the manifold uses of their books by scholars and experts. The extent to which the authors of books and writers for newspapers and magazines are indebted to these Government sources of information is the more difficult to trace, because so generally Government works are considered common property and no acknowledgment is made. Moreover these works, however valuable, are often omitted from indexes of subjects and are altogether without paid advertisement.

Thus it appears how far the organization and action of the General Government are removed from those of a paternal government on the one hand, and how on the other hand they differ from that of a mere sheriffalty (shrievalty). From these brief statements we cannot fail to see that its quickening influence has been felt in every department of thought and action, and yet where has it dwarfed or paralyzed or diseased the action of private individuals? Where have its efforts been other than healthful and stimulating, and may I need add, useful? For if these great informing characteristics of the Government should be blotted out, affairs might drift on under the impulse already created, but how speedily their lack would be recognized and their absence deplored! How keenly would be felt the impossibility of continuing our Government for and by the people, our institutions of liberty, our varied vocations, our science, art, literature, and life! But it is already apparent that in connection with the indirect informing influences that flow from the current administration of national affairs, there is also a vast amount of activity that is preëminently for the purpose of informing the people. Every library already enumerated is in itself a direct educational agency. All the publications of the Government Printing Office are for the information of the people.

More closely connected with the Interior than any other department is the immense establishment in which the Government printing and binding are done. It has grown from its small beginnings, in 1852, until it now ranks in the extent and value of its equipment and the number of its employés among the leading offices in the world. The varied character of the publications of the Government would overtax the resources of any establishment not of the very first class. Intricate mathematical work has to be done for various offices; rare types must be obtained for monographs which the Government publishes in regard to Indian languages; and treaties and foreign correspondence are placed at the disposal of the State Department in accurate form and in the original tongue. But the office is also called upon to execute with the utmost dispatch, and with the highest attainable accuracy, the great volumes of work called for by Congress and the several Departments. In 1881 the printing-office prepared over half a million (502,801) pages of types for books, which were printed to the number of nearly eight and a half millions (8,466,333). This is entirely exclusive of blanks, blank books, etc., and of the Congressional Record. You will be in a condition to estimate the celerity with which this work is performed when I tell you that a book of 1,400 pages was begun and finished within three days. Again, in the recent Star Route trial, the record of a day's proceedings amounted to 434 printed pages. The copy was received about six in the evening, and the completed book was in the hands of the judge at ten o'clock the following morning. Possibly the office may not equal the printing-house of Austria in the polyglot character of its publications, or that of France in historical interest; but it is clearly one of the best equipped printing-offices in the world, and a monument of that practical sagacity in administering affairs which has placed the United States in the fore front of the civilized nations of the globe.

There are those who object to all this expenditure in printing as so much waste,—as a business that does not belong to the Government. They would have all the printing done by private parties, and all the books sold as they are under monarchical and other forms of government; but the effort to have the work done by private parties was long tried in many ways, and the present method has been found far superior in economy, uniformity, and efficiency. Doubtless there could be improvement in the ratio of distribution for different documents, but it must be remembered that ours is in no sense a paternal government; our officers are not over the people as parents; they are the servants of the people, expected to render an account for their stewardship; and the day has not arrived when an American citizen is ready to pay either the officer or a third party for the report of the service the officer has rendered. By the present method of publication at the expense of the Government, making all Government works freely accessible to the citizen, there comes the publicity that is so great a safeguard in the workings of our institutions or of any representative government. Woe betide the day when the people become indifferent to what their representatives say or their executive officers do!

Now look at the decennial census that the Nation takes under the Constitution. Once it was a bare enumeration of the population and of the males capable of bearing arms. Now it is the periodical ascertainment of every material and moral force possessed by the Republic that can be expressed in numerals. It forms a vast storehouse of facts respecting every class of the community, every kind of industry, every sort of property, every condition of intelligence, from which the philosopher, the historian, the legislator, and the economist can draw needful information for the prosecution of their public and private labors. It is no longer a summing up of human hordes and the raw material of war; it is the wise survey of our own affairs for our own good and the information of posterity.

Nor is the work of the Bureau of Statistics, in the Treasury Department less useful in its way. Here the tonnage of our vessels, the traffic of our commerce, foreign and domestic, the immigration to our shores, and similar subjects are carefully studied and reported. It would indeed be well if every great executive department of the National Government had some such office in it for the consideration of the subjects of which it has charge.

The Bureau of Education, in publishing its reports, circulars, and bulletins, is only following the example set by the other Departments and Bureaus of the Government. It differs from some in distributing these publications more widely, and from others in distributing them systematically. But the principle of informing the public as to what is being done is the same here as elsewhere, excepting that with respect to education it is simply an office for collecting and disseminating information. To add to its efficiency it has a museum, filling one story of its building, containing illustrations of educational conditions and appliances. It has also a library of 14,000 books and 35,000 pamphlets; an author and subject-catalogue of the library is in course of preparation by which every book and article treating educational progress or methods may be traced. With very limited means and a small force of assistants, aided generally by the teachers and school officers of the country, this office has issued an annual report for a series of years, various special reports, circulars, and bulletins. Its correspondents number about 20,000; its information from foreign countries is very full. It receives in a single year as high as 30,000 communications, and has sent out 67,000 and distributed over 300,000 documents.

The Interior Department and its Bureaus have issued more than 1,200 reports, books, pamphlets, circulars, etc., and of this number the Bureau of Education is responsible for about eighty. This is the teachers' own office, created in response to their request and administered in compliance with their wishes as expressed in their conventions. It is not necessary to say more now about the place and purposes of this office as a national organ of information.

The Department of Agriculture is one great school of instruction through all its varied laboratories and all its divisions of statistics, entomology, botany, chemistry, forestry, and microscopy; through its propagating garden, its seed division, its library of valuable works gathered from the civilized world, touching all the subjects of interest in the department; and its museum illustrating all the economies of agriculture and its soils, agricultural appliances and methods, is one of the most visited at the Capital. Its annual reports are published to the number of three hundred thousand copies; its monthly and special bulletins and reports are greatly sought by our farmers and those directly engaged in handling farm products. The great work assigned it more than deserves the increasing appropriations, that already reach $425,000 annually.

The Smithsonian Institution, of which you have heard and read so much, was founded in 1846 by the bequest of the English scientific man whose name it commemorates. The United States accepted the bequest, and created a corporation to manage its funds. When, by an error of judgment, those funds had been invested in State bonds that were repudiated shortly after, the United States replaced the lost money, so that the Institution to day, while bearing the name of its original benefactor, is in reality supported by the income derived from the Nation's money. Most nobly does it serve the purpose for which it was founded, "the increase and diffusion of knowledge among men." Its annual reports, contributions, and miscellaneous publications have been sent to every important library on the globe, and by its well-managed system of international exchange both the national library at Washington and scores of other collections in all parts of the Union are yearly enriched with the publications of foreign societies and governments. Indeed, so great has this work of exchange grown that it costs the Institution more than $7,000 every year, and it has been proposed that a Bureau of International Exchange, managed by the Smithsonian, under the supervision of the State Department, be organized. This, however, is but a small part of the work stimulated or assisted by the Smithsonian. For many years its former director, Professor Henry, was the soul of the Lighthouse Board; for several years its present director has been the chief of the U. S. Fish Commission, which has done so much for science and for human comfort and national wealth. Almost ever since its foundation the Institution made meteorological observations and published the data accumulated, and from these General Meyer and Dr. Abbe obtained the groundwork on which the Signal Service of the Army has done its great work elsewhere mentioned. The Smithsonian long ago was made the custodian of the National Museum, and into this the geological, geographical, and ethnological surveys and expeditions of the Government have been pouring their priceless accumulations, until a new building has been erected to hold them. Still further, the linguistic and material collections relating to the American Indians have become so astonishing in value and variety that Congress authorized the establishment of a Bureau of Ethnology in the Interior Department to work in connection with the Smithsonian and the Museum, so as to bring out the results of this direction.

Thus far I have made no allusion to the policy of land-grants, in accordance with which the United States is understood to have done most for the promotion of education and the increase of intelligence and virtue among the people. It is well known that certain colonies were accustomed, in organizing towns and townships, to set apart portions of land in aid of schools, the church, and the clergy. In the Congress of the confederation, Mr. Jefferson was chairman of the committee that in May, 1784, made a report on the organization of the western territory, which provided "that there shall be reserved the central section of every township for the maintenance of public schools, and the section immediately adjoining the same, for the maintenance of religion." The ordinance as adopted on May 28th, 1785, read: "There shall be reserved lot No. 16 of every township for the maintenance of public schools." The ordinance in its final form as passed in 1787 prohibited slavery, required the encouragement of liberty and morality, and set apart the 16th section in every township of public land for school purposes.

Webster, referring to this great act of patriotism, remarks: "We are accustomed to praise the law-givers of antiquity; we help to perpetuate the fame of Solon and Lycurgus; but I doubt whether one single law of any law-giver, ancient or modern, has produced effects of more distinct, marked, and lasting character than the Ordinance of 1787. It fixed forever the character of the population in the vast regions northwest of the Ohio." This great grant has shed its benign influence upon every State since organized, and the total amount of money reported as realized and now in hand, mainly from this source, in these several States reaches nearly seventy-one millions of dollars.

But the care of the fathers for education did not stop with common schools. When Ohio was admitted as a State it received 69,120 acres for superior instruction, and a similar policy has been pursued with other States. The great universities of Michigan, Wisconsin, and Iowa are examples of the results of this university grant of land, amounting in these States to funds, now in hand, reaching to $6,720,000.

Later, when the question of introducing scientific, technical, or industrial education arose, there followed the great land grant, out of which have sprung colleges of agriculture and mechanic arts in the several States, whose funds, arising mainly from this source, now amount to $4,802,000.

The total of these several large grants for education are put down as nearly seventy-nine million (78,659,439) acres, or more than twice as many acres as in the whole territory of England and Wales (37,324,883). A vast amount of these lands are only assigned and not yet sold, so that it is impossible to state what they will ultimately realize in dollars and cents. By various laws a certain per cent. of the sale of lands by the General Government in the new States, has been turned over to these States, sometimes reaching five per cent. of the whole. Under this provision, Illinois received, from 1821 to 1869, over seven hundred thousand dollars. In some of the States these incomes were assigned to the school fund. In quite a number of the States large grants of swamp-lands have been made over to the States, out of which, also, by the action of the several legislatures, has come a very considerable increase to the school funds; how much it is impossible to determine at present.

In addition to these various aids received from the United States for education by the several States, there have been a large number of special grants, as for instance 480 acres to Lafayette University; 160 to the Holy Cross Mission; over 22,000 for the education of the deaf and dumb in Kentucky; 400 to the Pine Grove Academy; and especially large amounts to several towns in Missouri.

In 1836 there was a large surplus in the Treasury of the United States, and an act was passed providing that a definite amount of this should be deposited with the several States in proportion to the number of members of Congress. The total was over forty-two millions, of which three installments were turned over. The fourth installment was not paid on account of financial embarrassments. The amount received was $95,584 for each member of Congress. These moneys were all held in trust to be paid on call to the United States. A number of States set apart the amount received as a fund, the income of which was to be used for the schools. This was done definitely by Alabama, which received over $669,000; by Georgia, which received over $1,051,000; by Illinois, which received over $477,000; and by Indiana, which received over $552,000; $850,000 of the share of Kentucky was set apart for this purpose; Louisiana granted a considerable portion received to the colleges of Jefferson, Lousiana, and Franklin, and the Covington Female Academy; Maryland and Pennsylvania, after paying out of it the public debt, set apart a portion for the benefit of education; Missouri and New York set apart the whole amount for common schools; North Carolina transferred $300,000 to the literary fund; Ohio provided that the net income should be used for the encouragement of schools, and Rhode Island did the same; Tennessee set apart her share as a school fund. A number of States distributed the amounts received between counties and towns, and allowed the money to be used for school or other purposes, at their option. How much thus went to schools it is impossible to determine. The whole amount distributed was twenty-eight million dollars. How largely this great supply of money became a factor, contributing to the success of the revival of education at that period, no one can calculate.

Congress, touched by a humane effort to introduce education for deaf mutes in this country, gave 23,000 acres in aid of the establishment of the first institution at Hartford. Moved by a similar sentiment for the blind, it has recently set apart a fund of a quarter of a million, the interest of which is to be appropriated for the printing of books for the blind, which are to be divided equally for the use of the blind in the several congressional districts. These books already in the several States constitute valuable libraries for the use of this interesting class, shut out from the usual sources of information.

But I have not time to dwell upon the splendid school at West Point for the Army, or that at Annapolis for the Navy. Indeed, in closing, I can only mention that last special action of the Government for the organization of the Civil Service Commission, intending to examine more critically into the qualifications of those who enter the classified service of the Government, and thus to place a premium on good attainments and good character, and therefore impart new stimulus to the instruction of the people throughout the land.

THE IMAGINATION.[1]

BY A. P. MARBLE.

The subject to which attention is here invited may seem, from the title, to be some metaphysical or psychological discussion in the realm of the abstract and the comparatively unknowable, but such is not my purpose. I hope to keep within the limits of what may be seen in the school-room daily by every intelligent teacher, and to confine myself to what we all know, leaving speculation and psychology to people better able to deal with such themes. But in teaching we have to do with the mind; and the mental faculties are connected with the body so intimately that the two must always be together;—we know very little about disembodied spirits. In reflecting about that upon which we as teachers ought chiefly to work,—the mind,—we must of necessity consider it in its different manifestations, as the memory, the judgment, etc.

Object-teaching,—objective teaching, as some call it,—hasformany years engrossed the attention. Everybody feels sure of getting the public ear if he emphasizes what he has to say by labeling it "Object-teaching." Number must be studied by the beginner with blocks and marks, by tangible objects or visible things only. Geography must begin with a map of the pupil's desk or a table; and then go step by step to the map of the room, the school-yard, the neighborhood, the town, and so on; and not content with maps and pictures, we invent the relief-map, which shows the elevations and depressions of the land; and we even build little hills and mountains of sand on a blue table to represent the water; and astronomy has been taught, the planetary system at least, by representing the sun,—the center of the system,—by a bright and fair-haired girl, perhaps; and the planets revolving about the sun by boys of different sizes, all walking around the central figure in orbits greater or smaller; and certainly the attractive force, in such a device, is well illustrated.

Now all this object-teaching, as a protest against the dull memorizing of facts, which are not at all comprehended by the pupil, is a move in the right direction, and too much cannot be said in its praise. It is the substitution of real things for empty words. It is teaching instead of cramming. It is the awakening of live interest for dead drudgery with the forms of things which possess no sort of interest for the pupil. So far object-teaching should be practiced; it ought to be commended; but it should not be worshiped as the all-in-all, After saying the above, and with all that has been said and all that it implies fully in mind,—for it must not be supposed by any possible misconstruction of the words that anything here said is in opposition to object-teaching,—with all this in mind, let me say that there in a point in the training of a child where object-teaching, strictly followed, becomes a serious hindrance, and where it ought, partially at least, to be abandoned. It may even become an intolerable nuisance. It may be so used,—I am sure it often is so used,—as to obstruct the child's real progress and cramp his mental growth,.as a tree is deformed by growing in the crevice of a ledge or crowded between two great rocks.

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[1] An address delivered before the Worcester County (Mass.) Teachers' Association, at Gardner, near Mt. Wachusett.

The real purpose of object-teaching is to fix the attention upon solid facts; to cultivate the perceptive faculties, — the power of observation, or whatever we may call it, — and then through this, and higher and above and beyond it all, to develop the reason and the mental powers. It is of comparatively little use for a child to perceive if he does not make some rational use of his perception. A dumb creature can perceive. A pet cat can see better than a child; the dog has a much better sense of smell, and his hearing is more acute than the child's.. There is something in the child, however, which these interesting creatures have not. It is this something which we wish to cultivate. If we allow the object-teaching to stop short of developing this higher faculty of the child, we leave him inferior to the cat and the dog in those faculties which we have been cultivating; and if we perpetually and incessantly hammer away at the doors of the senses, — in other words, if we have nothing but object-teaching,—we fail to reach the holy of holies of the child's mind, that higher being, distinct from the intelligent brutes; and it is possible for us to surround the senses with such a heap of the rubbish of material things that the mind within is imprisoned as with adamantine walls, when we ought to have opened the door that the spirit may go free. It is in this case that the object-teaching will have become a nuisance, a delusion, and a snare.

What made those great men, Abraham Lincoln and James A. Garfield? It was not object-teaching in any technical or exaggerated sense. It was the contact of a fresh and intelligent mind with the real things of nature, and something more, — thought, reflection, self-communion. It was the few facts worked over in the mind.

Hence, Abraham Lincoln, reading his Bible and Shakespeare by the light of a pine-knot, became more of a man than he would have become with all the books, full of all the "*ologies*" and the best of modern teachers, if those teachers were to fill up the time with never-ending talk, talk, talk, and book, book, book, — leaving no time for the boy to think.

It is this something which the boy may have, and which the dog and the cat have not, to which I wish to direct your thought, and for want of any better name we will call it the Imagination; and to the development of this higher faculty, and only so far as it tends to this development, is object-teaching valuable. Yet, I fear, we often stop short of this end, and lose sight of the aim in the pursuit,—in other words, object-teaching often becomes an end in itself, and not a means to an end. If so, it is an arrant humbug!

Imagination is, I suppose, the making of pictures in the mind. As contrasted with memory, it is the combining of images in the mind in a new form. We remember to have seen the head and horns of a cow in their appropriate place upon the animal herself; we may imagine this same head upon the body of a horse, though we have never seen one so placed. Similar rearrangements we may make of the ideas we have, which are not derived from material objects.[1] In the illustration above, the creature of the imagination is grotesque,—an impossible animal, so far as we know, in this neighborhood; but, on visiting a menagerie, we may see the horned horse, which is something like the creature of our imagination. The creation of the mind, however, is no more real because we afterward happen to find some created thing to correspond with it; nor are these creations of the imagination any the less real because the corresponding objects are never afterward discovered. The grotesqueness is not at all a necessary quality of the creations of the imagination; it is not more frequently found in the product of the imagination than it is found in nature. We occasionally find abortions, deformities, malformations in nature, but these are the exceptions and not the rule. In the products of the imagination the grotesque is likewise the exception and not the rule.

It is necessary for me still further to define the meaning of the term "imagination"; for, as frequently used, the term means only that which is unreal, unsubstantial, and without foundation. The word is often used to denote mere fancy, — the vague and ill-defined shapes that flit across the field of the mental vision like the shadows of fleecy clouds across the landscape. In this sense the word is a symbol of the unreliable, and hence the word has come to have a doubtful meaning. This is not the sense in which the word is here used. When you stand before a highly polished mirror, O my beautiful friends, there you are a corporeal existence,—with flesh and bones and blooming cheeks, and flashing eyes beaming with intelligence,—and fashionable and well-fitting clothes, let us hope. There is also an image of yourself in the mirror, if the lights are turned on. This image cannot be touched, nor heard, nor tasted, nor smelt; but it can be seen. It is not material,—except as the particles of light are material,—but it can be seen; and in this sense it is just as real as the body itself which causes the image. So the products of the imagination are to the mind as real as this image is to the eye. Imagination, then, as a faculty of the mind, is not less concerned about realities than memory or any other mental faculty; it is not less a reality than the sensations or mental states that are produced by external objects through the organs of sense.

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[1] ", Righteousness and Peace have kissed each other." Thisis figurative language, personification, and all of the imagination except the act, which is a pleasant memory. "Perfect Love casteth out Fear." If these instances do not show the correctness of my statement, the "Fourth dimension" of solids, which some person has imagined, must

Again, there is the poetic imagination, which has to do with sentiment, emotion, feeling. We more frequently use the word in this sense, perhaps. It is hardly necessary to say that this is not what I mean; for this has to do with the artistic,—with the beautiful creations of a poetic fancy, as displayed in verse and song; with the conceptions of a fine literary taste, or the great works of painters and sculptors.

The imagination which I am talking about is a much more common-place, a much more universal, and a far more useful and indispensable affair. The imagination, as I use the term, in its broader significance, is a faculty just as common as the memory; it is not less useful than the memory: for in all mental activity it must be brought into play; without it there can be no real mental growth. More than any other mental faculty, it distinguishes man from the brute creation; for a horse remembers, for example, that certain acts of his result in pain inflicted by the whip of his master; and reason, which is sometimes called the distinguishing trait of human beings, cannot be carried on without the aid of the imagination. In the syllogism, which is the simplest form of reasoning, we derive a conclusion from two premises. For example: all birds have feathers; this animal is a bird; therefore this animal must have had feathers. Here the conclusion is derived from the premises; but before it was thus derived, the maker of the syllogism must have anticipated the conclusion by an act of the imagination; he must have projected his mind forward beyond the facts then before his mind to a conclusion not yet reached,—just as a temporary bridge is thrown forward across the stream in advance of the permanent structure, by means of which alone the permanent bridge can be built. The imagination, then, is made use of even in reasoning. In this broader sense there is nothing which we do, mentally, without the aid of the imagination. I am here talking to you; you sit there and listen patiently. Many of us were never in this room before; but we all came here, mentally, before we took the train this morning. It appeared to me, in a vision of the mind, after the program was published, that here would be, perhaps, a pulpit and a lecture-platform in front, on which I should stand; that a patient and respectful audience of teachers and a few curious individuals of the town,—curious to see what these teachers have to say to one another,—would be before me; that the president would introduce me in a few well-chosen and commendatory words; and then that I should stand up, clear my throat, take a sip of water, and begin.

I saw that some people would come hoping to hear the interesting papers on arithmetic,—papers having an existence only in the imagination; for those prepared for last June were read elsewhere, and were not available for this meeting; and that after hearing a few words of the paper on that abstract subject, the Imagination, they would quietly steal away. I was here, you see, yesterday; and you were here also, in the same sense, or you would not be here to-day; for, when you read the announcement of the meeting, and the conditions on which you could come, you made the journey in imagination, to see whether it would pay to put in a bodily appearance. Those who had attended such conventions before came to a place almost precisely like this; others visited a place somewhat different, but just as real to their minds. You all liked what you then saw that you were to meet, and so you are here. Others in their imaginary visit, — and they all made a visit to Gardner, consciously or unconsciously,—others found that the imaginary cold dinner which they ate from an imaginary basket, in an imaginary hall, notwithstanding imaginary hot coffee was passed around by beautiful and benevolent imaginary ladies of Gardner, young or older, — that this cold dinner and the fatigue incident to sitting in the imaginary vestry of the Congregational Church, and working so hard to listen to the speakers whom they heard,—the real speakers do not tire you, of course,—saw, as I was saying, that this fatigue and the cold dinner, and, perhaps, indifference to the whole thing, gave them a tremendous imaginary headache, and so they are not here to-day. Of course, many who came here yesterday are not here to-day because they could not come; but some are here in spirit, whose forms we do not see.

In looking back a few pages I find the word imaginary,—"imaginary hot coffee," for example. The word has been so prostituted by common usage that it does not express what I mean. *Imaginary* signifies *unreal.* What I have referred to is real, as a mental act; and *imagined* would be a better word. People of Gardner, did you know that all the teachers of Worcester County have visited you within a week? And, O walls of this vestry, did you take note of the silent company that came to look into this convention, and paid no railroad fares? Did I seem to you as I now appear, when yesterday I stood in this place? and did the president sit there, with his legs crossed? We come here in imagination, then, or we should not now be here in body. Now, what is true about this simple act of coming here,—the visit in imagination first,—is also true of every act of our lives; we live and move and act by the constant exercise of the imagination,—the imagination in its broader significance.

What is here meant by this broader sense of the term has already been explained and illustrated to some extent; but I will be more specific still. The carpenter who builds a house pictures in mind the structure in all its parts before he strikes a blow. He is aided in making this mental picture by the plans and specifications and elevations made by the architect; and so each step in the progress of the work advances the building stage after stage, and nothing has to be done over again. The blacksmith puts his iron into the fire and blows his bellows, and while he blows and watches the reddening iron, there is in his mind, consciously or unconsciously, a picture of the horseshoe, or other piece of work, which he is to hammer out; and every blow brings him nearer to that result, if he is a skilled workman. If you stand watching him, you may not discover what he is driving at, at first; but if you watch the same process many times, or if the process has been thoroughly explained to you, then you will see the same picture which the blacksmith sees; in this case you have been taught so much of the blacksmith's trade.

In one of the newest and prettiest churches in Worcester there is a stone arch spanning the space above the chancel rail, and the arch is supported on either side by a stone buttress, or column, built into the corner of the wall. These columns have ornamental capitals carved in stone; and the columns that support the arcades along the sides, and the corbels in the walls from which spring the arches of the side circles, and the stone cornices, all have upon the underlying forms a tracery of vines and fruit and leaves, richly ornamental. In the building of that church each block of stone that was to form this ornament was finished in all its other parts before it was set in its place; but the ornamental portion was left in the rough. In my ignorance I wondered why this was not finished like the rest; and in my imagination I did not see the beautiful forms which are now to be seen. The architect, however, had seen them all; they were represented on paper before the stone was quarried; but after the building was approaching completion, when all danger from handling the heavy timbers and lifting other stones above them was over, then a skilled stone-cutter took the architect's drawings and from them learned what the ornamental forms were which he was to carve in the stone; and seated on a rough staging within the edifice, with chisel in hand, he wrought out the idea which was in his mind. He saw the ornamental forms, the birds and fruit and flowers in the rough stone, just as plainly as we can now see them cut out upon the columns and corbels and cornices. Without that picture, distinct and well-defined, in his mind, every blow of his hammer might have spoiled the stone. To form those images in his mind by the aid of the drawings which represented them, and then to cut these forms in stone, was his education. It took many years to learn how to do it. His was skilled labor; it was worth much more per hour, because of the rarity of such skill and the cost of acquiring it, than the work of an unskilled laborer who only handled the rough stones that were placed in the foundation-walls. Notice the imagination of the stone-cutter. He could not measure and mark out the pattern upon the stone, except roughly, and cut by line. He wrought after the pattern which his imagination presented to the mind.

Is not the imagination, in this view, a very different thing from that which we mean when we use the word to represent what is not real? "The equator is an imaginary line, passing around the earth from east to west, equi-distant from the poles;" a line that has no existence; hence we are accustomed to think the imagination deals with that which is without an existence. But the imagination of the stone-cutter is a reality,— as real in his mind as the image of your own face is in your eye. He proves the reality of his images by cutting them in the stone. You prove the certainty that the image in the mirror represents your face, by moving a little curl on your forehead, or changing the dimple in your laughing cheek, or by touching your nose with the forefinger.

Enough has now been said, I trust, to make it clear that the imagination has to do with realities, and that it is actively present in work as well as in writing poetry or stories; in other words, that the imagination is a very common, every-day affair, and that it is always necessary in all work, both intellectual and manual.

This important, ever-active, creative faculty of the mind is to be cultivated in the schools. It is the aim of these remarks to aid you in cultivating it. Impressed now with its importance, let us see briefly how this may be done, at least suggestively, if not very explicitly.

As intimated above, most of the child's first ideas,—images in the mind,—are obtained through the senses. With these we begin. We teach numbers by the use of blocks, for examples. A single block, we call one block; put another with it, and we call these two blocks; another, and we call them three blocks; and so on to ten. Now we take two blocks and place them here; and two more blocks and place them there. The child is then asked how many there are in all together; and by counting them he tells us there are four blocks. By continuing for a short time with such combinations as this, he will readily master all the combinations with numbers below ten; and by a similar process of taking away one or more blocks from a larger number, he will soon learn to make all the subtractions of the same numbers which he has previously combined; indeed the two processes should be carried along simultaneously, and side by side. At this early stage, a new idea must have entered the child's mind,—the idea of putting together and of taking away or diminishing. This new idea has not entered his mind through the senses, in the same sense in which the idea which he expresses by the word block has entered his mind. It is therefore, to some extent, an abstract idea, and is the product of the imagination. It is the duty of the teacher to watch for the evidences of such a conception in the child's mind, and then to treat that idea just as he treats the idea of the block; to talk about it in a simple and easy style, to give it a name, and to familiarize the child with the offspring of his imagination. Putting together or taking apart is an act. A child conceives of an act as readily as he conceives of a thing; and it is as easy to give a name to an act as it is to name a thing. When the child surely has the idea then he is ready for the name which represents that idea; and if he really knows what the process is, he may as well call it addition then as at any future time. Of course the great danger is in going too fast with these names of abstract things; but the danger is not all on one side; we may go too slow; and the pupil may have a number of these children of his imagination without names; and these children may get "mixed up," like Little Buttercup's foundlings, much to the confusion of the owners.

Children are often ready for the appropriate names of their ideas before we are aware of it; and long names do not stagger them any more than short ones, if these names stand for definite ideas. I once knew a little girl who had played with porcelain dolls and wax dolls. By dint of much pounding, and by the effects of heat upon the wax, she perceived, very soon, the perishable nature of this kind of property. Her mother bought her a doll made of papier maché, which was called indestructible. The battered and scarred face of this creature soon attested its durability, and the child of three years old habitually called "it the indestructible doll." A three-year-old child with a five-syllable word; and she handled it as easily as any other word, for it was the name of an idea; and this idea was the product of her imagination.

In place lessons, also,—the beginning of geography,—the imagination comes into play very early. We place a few objects upon a table, and give names to the places they occupy; as, upper left-hand corner, lower right-hand corner, center, middle of the right side, etc. We next make a drawing of the table upon the blackboard, and represent the objects by rude pictures. Here is work for the imagination at the start: to conceive that this drawing and these rude pictures represent the real things before us. But the child is ready for such work. Has he not represented a span of horses harnessed to a carriage, by his father's boots, and tow string, and a chair?

Very soon, that is by the time we have gone beyond the schoolyard in our representation of places by maps, we must rely wholly upon the imagination for pictures in the child's mind of that about which we would teach him. The boundary of the town, for instance; who has ever seen it all? No child, certainly, and not one in a thousand of the grown people. In this study, there is little else besides the forming of correct pictures of places, people, and products, in the child's mind; and the teacher should incessantly watch to see that these pictures are formed, and test their accuracy. Maps are good; globes are useful; map-drawing helps; and even moulding mountains, peninsulas, and other natural divisions, may more than compensate in clearness of conception for the time consumed. But with all this there is a danger; and the more elaborate the apparatus, the more care taken with the illustration, the greater the danger. What if the accuracy of the map-drawing is so great that the child forgets to notice, or to imagine, that which the map is intended to represent? What if, in moulding mountains in sand, so much care is taken that the child fails to imagine what the real mountains are like? What if, in examining the globe, its names and meridians, its parallels, its colored oceans and continents, and above all its elaborate mountings,—in examining and naming all these, what if he fails to imagine what the earth is, and how it moves? and he can know about it only by the aid of his imagination.

Here it may be in place to observe that costly and elaborate pieces of apparatus like object-teaching, and patent methods, and the "new teaching," may be so dwelt upon that they eclipse the thing they are designed to illustrate, and by over-teaching teach nothing. The child wants time to form images in his mind, and to recognize and work with them,—to exercise his imagination. We are liable to dazzle with brilliant representations of things unseen, and thus to obscure what we would make plain.

It would be interesting to remark upon the boundless field for cultivating the imagination in all reading, from the first steps to the last; in history, which is nothing without these mental pictures of what has long since passed away; inthe advanced arithmetic, where the first thing, after stating the conditions of the problem, is to form a theory of what is next to be done,—this theory being a product of the imagination, and in language which rests upon the imagination; and, in short, in every branch of every study in every school of every grade. But time fails, and your patience must have a limit.

In each study to which pupils devote their attention, all the facts brought forward, and all the efforts of the teacher, are subsidiary to the activity of the mind; for it is the mind that we are training, however it may be necessary to use objects and material things to produce this effect, to wit, the training. And in all that any teacher ever does for his pupils, this aim should be constantly before him. The dawnings of intellectual power, the shooting forth of new capaccities, like twigs and leaves and branches from a tree in spring,—this is the product for which every teacher should be looking; and this is how the growth proceeds. From the facts presented, from the things known, which the skillful teacher presents in their proper relations and so as to be suggestive, the pupil s attention is directed to something beyond, as yet unseen, and by an effort of the imagination his mind projects itself forward beyond the limits of what is known to him. He thus plants his feet upon new and solid ground, and the boundary of his knowledge is enlarged, and his power of still further enlarging his field of knowledge is augmented. The successful teacher helps him as easily as the old eagle teaches her young to fly;

and the teaching is for the purpose of the future flying. The mother-bird does not labor merely to transfer her young from bough to bough; she might much more easily carry them upon her back, if that were all. She labors that her young may acquire the ability to fly themselves. So the efforts of all true teachers are directed not merely to the acquisition of knowledge by their pupils, but to developing in them the power to acquire. And as the imagination is a necessary agent in this power, the teacher should watch unceasingly to see what pictures are in the child's mind, to see how he uses those pictures, and to seize each opportunity to present new ones.

I have thus far endeavored to explain and illustrate to you the nature and the uses of the imagination,— the philosophic or scientific imagination, as it may be called,— and to show how it comes into play in the activities of life, with the carpenter, the blacksmith, and the stone-carver; and how it must of necessity be active in all intellectual pursuits, and in every study at school. And I have hinted at the brilliant imagination of children, and suggested that this faculty should be cultivated, directed, controlled, but never suppressed. This is the commonplace, every-day, ever-present faculty which, like memory and judgment, is of daily use.

It remains for us to speak briefly of the poetic imagination, which is of later growth, in its higher forms, and which contributes to our pleasure, and is a source of exquisite enjoyment. In this form the imagination may furnish each one of us with almost infinite satisfaction. We may not possess wealth, and we may not be able to see with the eye much of the beauty there is in the world. But there is enough within our reach to delight us; and in imagination we may see it all, while our poor brother who travels the whole world over and spends more money yearly than any one of us will ever see, may miss all the beauty and most of the joy, because he has not imagination.

It is the summer vacation. All the noisy children have gone off for two months of frolic and play. Weary and exhausted, we have left work behind. Go with me to the top of Mt. Wachusett. Any one can go there. Let us seat ourselves upon a rock on the summit. It is morning. The cool breeze fans the cheek, and drives away all thought of the sweltering heat of the day before. We are filled with the freshness of childhood. Lift your eyes and look around. On the north, with rugged lines projecting on the sky, looms the majestic form of Monadnock. Stretching to the northeast is the blue line of hills; and away beyond, dimly distant, is seen Mt. Washington, surrounded by the lesser peaks, Jefferson and Adams, and the rest, as the patriots in early days were wont to stand about the hero of the Revolution, with their council and support. To the east, with lake and valley, hill and dale in picturesque combinations, the landscape stretches far away to the misty ocean. The Arlington heights rise like little hummocks above the level line of the horizon. The monument at Charlestown, reminding us of what we owe to the fathers of the republic, is seen as a mere speck on this great field of nature's work, and the gilded dome of the State-house suggests the glory of this ancient Commonwealth. To the south, there is a no less enchanting prospect. The lakes cluster among the hills and hide in the shadows of their borders of forest trees. On hillside and in the valleys, cottages shine in the sun and flash upon our minds visions of the homely joys which they conceal. Farm-houses, with spacious barns, and factories with smoke-crowned chimneys, tell their tale of thrift and frugality and prosperity. Nestled among her cordon of hills, the capital city of the county speaks of commerce, manufactures, enterprise; and her towering chimneys, like altars, are steaming with the sooty incense of Industry,—and we are on the mountain-top, far from the din. To the east, irregular as crested waves and zig-zag, now approaching, now receding, is the line of highlands that divide the rich valley of the Connecticut from the waters of the Nashua and the Merrimac, the Charles, the Blackstone, and the Quinibaug. And all this region, from horizon to horizon, like an amphitheatre, is under your eye. In all the vast circumference there is not one spot which is not full of beauty; and all this beauty is yours to enjoy, if you have but the imagination to enter into the heaven that invites you.

The county is peopled with an industrious, intelligent, and happy population. In ten thousand happy homes, fathers and mothers are busy with the work that brings their beloved children bread. The children gambol in their light-hearted joy-in-existence, and take from their parents' toil its burdens. Within the compass of your eye, architecture has displayed itself in many a noble and enduring structure, the temples of religion and learning, and in monumentsto valor. Art and literature and science have here their place and their devotees.

Go back in imagination a few years, and you will see, all over this region which now lies slumbering so serenely at your feet, the array of marshaled hosts of patriots, with hearts bounding high as they rushed to the defense of their imperiled country. Turn back a century more, and behold the "embattled yeomen" who "fired the shot heard round the world" at Concord and Lexington; another century, and you hear the war-whoop of the savage Indians who made night hideous for our forefathers, who used to rendezvous on this very mountain, and one of whose captives was ransomed upon one of the very rocks below you,— Mrs. Rowlandson of Lancaster.

Trace in imagination the history of a people for a quarter of a millenium, the scene of which lies spread out before your eyes; a history with its lights and shadows, but the lights far outnumbering the shadows; a people who both toiled and enjoyed, but their joys were far in excess of the sorrows; and now they are all at rest. And all this active part which men and women worked for, is ours to enjoy on this breezy summer morning upon the mountain, without our moving a muscle. And rejoicing thus in the contemplation of the life of the past, and in view of this scene of entrancing loveliness, comes the thought that we are a part of the life of the present, and our work has helped to higher things. Thus it is that the toil which we wearily fled from seems radiant as with a glory; and we descend from the mountain, as it were, transfigured.

Such pleasure is there in the imagination. You need not stop on one mountain, and that the nearest. You may visit the White Mountains, the Alps, all Europe, the islands of the sea, without leaving your own little room. An ancient warrior used to sing,—

> "No pent-up Utica contracts our powers;
> The boundless continent is ours."

We men of peace may much more sing,—

> "The boundless universe is ours;"

for on the wings of this heaven-born faculty we may soar throughout illimitable space; backward, and all antiquity keep us company and contribute to our entertainment; forward, and all posterity are our friends. Solaced by the companionship of whatever is pleasing to us, in this whole universe to which imagination gives us the key, we may rise above the petty things that trouble us; and with duty and right as guides, we may wander daily through fields of perennial delight. It is the grandeur of such a thought which Milton puts into these words:

> "The mind is its own place,
> And of itself can make
> A hell of heaven, a heaven of hell."

The mind is its own place! unmoved by conditions or circumstance or time; free in the perfect knowledge of all truth. This is the goal to which all right endeavor tends, and toward which all right teaching guides the children; but in her most venturesome flights the imagination cannot compass that end in its perfection.

"Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love Him."

THE UNIVERSITY—HOW AND WHAT.

BY WILLIAM W. FOLWELL.

[*Abstract.*]

The present state of the higher education in America can be briefly comprehended in one word,—chaos. Thirty years ago there was a college course, simple and distinctive,—the education of the gentleman and the clergyman. The good old classical curriculum has nearly faded from view ; though its thread of good still runs along the broad web of scholastic life and work.

The elective system has come in like a flood. When there is not full election of studies, there is election from numerous courses of study. This election descends into the preparatory schools, and we see youth of fifteen choosing their studies, as they choose their hats and shoes; albeit with somewhat greater independence of fashion. The elective system has been vastly extended through the competition of an excessive number of small denominational colleges, for attracting students. Here we meet the signs of a religious chaos which is chiefly the cause of the confusion in our higher education. Each sect is logically bound to undertake the conversion of mankind to its particular tenets. Otherwise it has no right to exist. Colleges and universities are regarded as a necessary part of the apparatus of evangelization. The political chaos is hardly less conspicuous than those of religion and education.

Such is the aspect of affairs as we view them, faced to the rear. Looking forward, the prospect is brighter. Civil service reform promises at length to bring order out of political chaos. The clear and constaneous movement toward fraternization, not to say consolidation, of sects indicates the ultimate reunion of the body of Christ. Already has this amicable spirit affected education. As fast as sects and churches have caught it, have they disbanded the schools of the sect, and thrown their influence in support of the school of the Christian community. We are emerging, then, from chaos. There is a certain spirit of the age which assists. We look to our knowledge of the knowable, rather than to our surmises about the unknowable. Ours is the age of science, not of superstition. The spirit of the age appears in the higher education of modern nations. It has transformed the universities of Europe from strongholds of ecclesiasticism into grand emporiums of knowledge and

research. The university will at length appear in America. Has it not yet appeared? Are there not among the hundred and more institutions calling themselves universities, some which in character correspond to the title? Probably not. Why? Simply because they are loaded down,—handicapped with a vast burden of work which has no place in genuine universities. Now it needs to be sounded up and down the land that there can be no genuine university in America until there shall have been developed atop of the primary schools a system of secondary schools, more extensive and efficient than those now existing, in which students may do all the work which precedes a proper university course.

The people need to understand that there is a natural division of education-work into three distinct but adjacent epochs: the primary education for the child, the secondary education for the youth, the superior education for the adult. No system can be complete and orderly which does not embrace these three, properly assorted. If we have no genuine universities in our country, it is because we have no suitable system of secondary schools. In the attempt to build universities before developing secondary schools, our States have reversed the order of nature. Everywhere the cry needs to be raised,—"No more colleges, no more universities, till we have more and better middle schools!"

We need, then, secondary schools of high rank, with courses of study extending about midway up the average college course, as the foundation for the genuine university. We also need them for their own work and influence. The Americans have been called the most common-schooled, and least-cultured people in the civilized world. Matthew Arnold is probaly right in pronouncing us a vast horde of Philistines, happily unburdened, however, as his English countrymen are not, by a vulgarized populace and materialized barbarism. Mr. Arnold proposes, as the remedy both for England and America, the development of the secondary education. The common schools must continue to teach children those rudiments indispensable to the civilized man. The secondary school is needed to diffuse culture and develop directive power. The development of the secondary education will simplify many vexatious educational problems.

First: The problem of elective studies. In primary schools there will be no elective; in universities there must be absolute election; in secondary schools there will be merely the election between literary and technical careers. The steady, patient pursuit of some line of studies, approved by experience throughout the period of youth, is essential to education in the true sense of that word. The present American college being about half university and half secondary school, we have a miscellaneous confusion of methods and discipline.

Second: The dormitory problem. Build up the high grade secondary school in every considerable town, to which the youth may resort from their own homes, and not much remains of this question. The modern, the Protestant idea is to link home and school fast together; it is the mediæval, the monastic idea, which segregates youth from home and parents, and places them under the care of teaching priests.

Third: The coëducation problem. Build up the local high school till it shall be the homologue of the gymnasia of Germany, or lyceum of France, and let your daughters resort to it from the safe harbor of home, and this problem is more than half-solved at once.

Fourth: The problem of industrial education. We shall soon be obliged to follow the example of older civilizations in respect to this education. The attempt to organize industrial work in connection with literary colleges has not proved seccessful, and will not. This education assorts naturally with that of the secondary epoch, and forms part of the training of youth.

Fifth: The problem of business education; and sixth, that of the military education. Both of these fall naturally into the secondary epoch, and have no place among the studies which occupy the grown man in the university.

The genuine university awaits, then, the previous arrival of the secondary school. When it shall appear it will be recognized, not by the splendor of its housing and equipments, but by these two signs: 1. A large body of mature students whose secondary education shall have been completed, and who are ready for the studies of men; and 2. By a body of teachers who are experts and specialists, conducting and administering its affairs. Given these two things and they form a university, no matter if they meet in sheds and lofts.

It is of the nature of the university to have all knowledge for its province. All sciences have a common bond, and are at home within her precincts. The linguistic, historic, and philosophic sciences will ever hold their place. The political sciences, now that democracy has come and come to stay, have an importance vaster than ever. If the people will govern themselves, the people must know,—good fellowship and patriotism will avail nothing without knowledge.

The genuine university, then, lies in the future. The college of the present day is doing such work as there is to do. Since no magic can give both at once, it is doubtless far better to be much commonschooled than much cultured. The work of the generic university is not worth while, except as it arises from and responds to a wide and deep general culture. The immediate work for America is the development of their secondary education.

LEROY D. BROWN.

In October last Superintendent LeRoy D. Brown, of Hamilton, was elected to the office of State Commissioner of the schools of Ohio. The choice is a fit one, for Mr. Brown is not only a clear and fruitful thinker, but one of the most vigorous and valuable workers in the profession. He has, in an eminent degree, that openness of mind which is just now so much needed in education, and from which we have the right to expect the broadest and truest service. He was born in Noble County, Ohio, November 3, 1848, and in early boyhood received simply the wholesome and natural discipline of common farm-life. He is thus a true representative of the people, and his career is a refreshing illustration of that success which effort and intellect and courage may always hope to win. His father was a vigorous and clear minded farmer, and gave his son such educational advantages as the neighborhood in which he was reared would permit. What is more noteworthy, perhaps, he placed in his library a few choice books, and from these LeRoy gained that intellectual impulse which seems to have determined his future work. His mother, who is still living, is a person of great intelligence and of pure and beautiful habit of life.

At an early age Mr. Brown left school to join the Union Army, in which he served till the close of the war. As a soldier he was firm-tempered, true and, loyal, and was honorably discharged after the final victory of the nobler cause. He was engaged in many battles, and they proved to him a stern discipline in all manliness. In the year 1869 he entered the Ohio Wesleyan University at Delaware. From this institution, after several intervals of teaching, he was graduated in the regular classical course. He possesses Emerson's mark of a strong and successful man; namely, a bias toward a particular pursuit, and after leaving college, adopted teaching as a permanent vocation. He taught with rare success at several points in Eastern Ohio,—Caldwell, Newport, and Belpre, being some of his earlier fields of work. Before leaving Belpre, although working in a small community, he showed many of the admirable qualities which distinguish a rue master of his calling, and as such a master he was recognized by the most distinguished educators who had the pleasure of knowing him. For some time he was principal of the schools of Eaton, O. Here he showed the same traits as a teacher and organizer and scholar that he had shown in Eastern Ohio, and it was while in Eaton that his fine executive powers began to be recognized throughout the State. In March, 1875, he was elected Superintendent of the schools of Hamilton, in which place he has done his maturest and most admirable work. Under his supervision the High School has been consolidated and rendered more valuable, and every department of the schools made to reflect the strongest and best educational methods. In dealing with his teachers, Mr. Brown shows the art of a fine superintendent; that is, he leads them to a right knowledge of their vocation in such a way as to still leave them that freedom which is essential to the truest and most inspiring instruction. His new course of study is free from narrowness, and shows him to be conversant with the clearest and best educational thought of his time. He puts in practice the soundest principles of the "new education," though he is too wide a reader and thinker not to know that there are many ways of acquiring power.

While Mr. Brown values highly the few thinkers who have written adequately on the subject of pedagogy, he knows that he cannot be a great teacher who does not live in an atmosphere of the best thought. He is, therefore, a sincere student of the noblest productions in pure literature. This fine and fruitful knowledge of books he has supplemented by wide and observant travel both in America and Europe. In recognition of his fine scholarship he has recently received the honorary degree of Doctor of Philosophy Mr. Brown's prevailing energy is shown by the fact that in the midst of his professional work he studied law and was admitted to the bar. He also found time for valuable work in educational journalism, having been at one time associate editor of the *Public School Journal* and until recently the Ohio State editor of *The Journal of Education.*

It is too soon to outline with much fullness Mr. Brown's policy as Commissioner of the schools of Ohio. It is known, however, that in addition to carrying forward the admirable work of his predecessor in office he will make special effort to render more truly effective the present school laws of the State. His large experience as a school examiner has convinced him that one way of liberalizing the entire profession is to lift examinations from the sphere of pedantry to the sphere of scholarship. He believes that intellect and professional skill are entitled to be treated worthily, and by forming none but adequate tests of scholarship and ability, he hopes to induce more real teachers to obtain permanent certificates and adopt teaching as a permanent calling. It will be his aim also to render effective the present law, permitting the establishment of schools of higher grade in each township. Nothing certainly will tend more to give the country schools a true vigor and elevation than the creation of such a public sentiment as will lead to the practical carrying out of this law than this; indeed, no more important work awaits the fine intelligence and resolute energy of the new Commissioner.

Finally, Mr. Brown believes that teaching can only become a profession of commanding influence and worth by winning to its service the best ability. Method is much; but, at least, we must have superior teachers if we are to have superior schools. As a vocation, therefore, teaching should be so thorougly respected and so well paid as to induce the noblest young men and young women to adopt it as a life-work. Only thus, he thinks, can the new profession assume its true place among the callings of men, and to the end that it may assume such a place he is willing to give to it the greatest energy and best thought of his life.

REPORT OF THE UNITED STATES COMMISSIONER OF EDUCATION FOR 1881.

General Eaton's latest report is a volume which will repay careful study, dealing as it does with one of the most important public interests. According to this report our school population is 16,265,089,—a number larger and more variously constituted than that of any other western nation, Russia excepted. Comparisons between school population and the enrollment in public schools are misleading, on account of the difference in the legal school age in the several States. A better idea of the extent to which our people avail themselves of the schools is obtained by comparing the enrollment; viz., 9,860,333 with the number of youth between 6 and 16 years of age; viz., 11,771,437.

So far as the means of education supplied by the public schools can be tabulated, they may be readily gathered from the statistical summaries before us. The total teaching force is 289,159, or one teacher for every 34 scholars enrolled; for every 56 of the school population, and for every 173 of the total population. From a statement in the Commissioner's report, it appears that there is in Prussia, on the average, one teacher for every 78 children liable to school attendance, and for every 446 inhabitants. The number of teachers of all grades in the inspected schools of England, Scotland, and Wales gives one for every 53 scholars enrolled and for every 452 inhabitants. In Norway, where an obligatory law is in force, the number of teachers equals one for every 64 scholars enrolled, and for every 475 of the total population. In each case it will be seen the figures are flattering to our own country. The total income available for the public schools in 1881, was $88,142,088, to which should be added the interest on $186,143,452, the estimated real value of sites, buildings, and all other school property. The expenditures amounted to $85,111,422. These resources are derived from State tax, local tax, and permanent funds, and are very unevenly distributed throughout the country. Local tax is the chief source of income in the following: The New England States, New Hampshire excepted; the Middle States, New York excepted; the North Central States, Indiana and Colorado not reporting; the South Central States, Kentucky and Arkansas not reporting; one Pacific Coast State, viz., Nevada; one Gulf State, viz., Mississippi; three territories, viz: Montana, Utah, and the District of Columbia. Estimated upon enrollment the per capita expenditure was above $15 in six of the States, and below $3 in six, the latter all belonging to the group of recent slave States. In England the inspected schools were maintained the same year at an expense of about $6.50 per capita of enrollment, an average which is exceeded in 27 of our States.

As to the application of the funds, it appears that teachers' salaries absorb $55,291,022. The table of average monthly salaries shows that these ranged from $25.45 in South Carolina to $99.50 in Nevada for men, and for women from $16.84 in Vermont to $74.76 in Nevada. It is not easy to define what a fair living salary would be, so many conditions are involved; but it is evident that the general average, in rural schools, is below the minimum of any just estimate. So far as reported, the salaries of superintendents amounted to $1,151,804 Every year affords new evidence of the important relation which these officers bear to the efficiency of our schools. Through their persistent efforts the "district system," which, as the Commissioner observes, "is in the way of every measure of progress suggested by experience," is being legislated off the stage. Teachers' Institutes are the especial care of superintendents, and it is also mainly through their exertions that the daily routine of the country schools is developing into a progressive system of instruction. Among the most important means to this end are the definite courses of study for country schools adopted in many States.

City schools, it need hardly be said, differ essentially from country schools in their organization and resources. The 251 cities tabulated comprise school population and enrollment a little above 17 per cent. of that for the whole country, while the expenditure upon their schools is 32 per cent. of the total expenditure. In Southern cities school accommodation is yet not well up to the demand; in the majority of northern cities it is. Where deficiency exists in the latter it is occasioned "by the rapid increase of population, and is complicated with the problems of immigration, pauperism, and the labor of children." That the deficiency can be overcome is evident from the results shown in Boston, where the enrollment is 88 per cent. of the whole school population, while there is accommodation in the schools for 92 per cent.

In popular discussions of the evils, the facts bearing upon truancy and absenteeism are very generally exaggerated. The Commissioner justly observes that, "in order to arrive at a fair estimate of the number of non-attendants and irregular attendants upon schools who are likely to sink into illiteracy, we should have (1), as a common basis of calculation, the period to which compulsory school laws are applied, where such are enacted; (2) the school census for each of those years; and (3) the number of non-attendants and habitual absentees for each of those years." It is difficult to express in an official record the progress of the schools in respect to those ideal conditions that are the determining factors in the development of the young. Only those who are personally familiar with the facts can understand the full significance of the improved methods of instruction and discipline, the larger provision for those exercises which give skill and precision in the manual arts, and the increased attention to those influences which promote the health and stimulate the moral development of the young. The report certainly confirms the opinion very generally expressed by foreign critics of our common schools, that we have found the cram system a false educational basis, and are rapidly retracing our steps.

We have so long been accustomed to regard ourselves as a reading and writing people, *par excellence*, that we cannot be too frequently reminded of our opposite tendencies. The report under consideration deals effectively with the subject; space does not permit more than an allusion to the principal points. Of white persons from 10 to 14 years of age, inclusive, 11.8 per cent. are illiterate; of colored persons, 66.2 per cent. From 15 to 20 years, inclusive, the white illiterates are 7.2 per cent. of the total number; colored, 62.7; giving as a total of colored illiterates between 10 and 20 years of age, inclusive, 1,072,523, a weight which it is hardly necessary to remind the reader is upon the Southern States.

The school resources of these States are set forth with fullness and impartiality in the report, and are manifestly unequal to the demand. Even in view of later representations of the remarkable advance in property valuation, etc., which has taken place in the recent slave States since 1879, it is impossible to resist the conviction that the appeal for national aid to common schools is simply a protest against national disgrace and disaster.

A special study of illiteracy in twenty-four of the leading cities of the Union shows that the number of illiterates in these, below 20 years of age, is a very small proportion of their total illiterates, and makes it clear that the illiterate masses with which our municipal authorities must deal are chiefly foreign-born or colored, and of adult years.

The necessity of special training for teachers is so universally recognized that the frequent attacks made upon normal schools in this country must be attributed to unpardonable ignorance of well-established principles and of the practices of nations whose progress cannot be a matter of indifference to ourselves. The Commissioner gives very full information as to the provision for this work among us; we have only to regret the absence of data for comparing this provision with the same in other countries.

The total number of schools that nominally provide for the training of teachers is 225. These include 112 private schools, some of which are doing excellent work in the direction specified, but which as a class are not well equipped for the service, and are not subject to any tests or supervision by which a special work is kept up to a high mark. The public normal schools have larger resources, are subject to constant inspection, and have been so frequently investigated at the instance of their opponents as to warrant the conclusion that their survival is proof of excellence. It is not easy to distinguish between the academic and professional work of these schools, as will be seen by a glance at the classification of their scholars.

Here arises an important question: How shall normal schools, high schools, schools of science, and colleges be so adjusted as to prevent waste by overlapping and duplicating courses? A question that becomes more and more serious, as the relations between science and industry are more clearly perceived, and the demand for teachers of specialties increases.

With respect to their pedagogic function, the normal schools differ greatly.

A few summer normals or normal institutes, and a few departments or chairs in State universities are included in the table, while the schools proper vary in the length and adaptation of their courses. These differences correspond to differences in the conditions of elementary education which exist everywhere, and call for such a gradation in normal schools as is embodied in the Prussian scheme. We have, virtually, like gradations; what we want now is their formal recognition, and distinct organization.

A glance at the columns of students and graduates will show how small a proportion of our teachers profit directly by the superior training. Something of its benefits, however, is imparted to the body of untrained teachers, through the teacher's institutes. Here we have an agency which, at a comparatively small expense, might be converted into the lowest grade of training schools, and sufficiently extended to cover the demand.

Those who consider our expenditure upon normal schools excessive will do well to look at corresponding foreign estimates. For a fair basis of comparison we may take the cost of the seven normal schools in the Netherlands, amounting in 1881 to 473,943.25 florins, about $27,490 each.

In the record of institutions that give, or profess to give, instruction above the elementary grade, we are met with a singular mixture of worth and pretension. An institution authorized to confer the B A. is a college or university even if it has no productive funds and no advanced scholars. In the case of schools for women the distinction between secondary and superior seems to be a mere matter of fancy. Taking the institutions at their own showing, we have in all secondary courses 224,815 pupils, or about 1 in every 223 of the population. Such of the schools as are supported by public funds are obliged to maintain a certain standard; the scholastic merit of the private institutions can only be inferred from their individual reputation, patronage, faculties, and resources. With the record before us we must admit the worst that has been affirmed of our conduct of this department, but we cannot allow that the worst is the whole truth. In a section which includes schools like the Boston high schools, Phillips Academy, Worcester County Free Institute, Columbia Grammar School; in a section which includes the Rose Polytechnic, the St. Louis Polytechnic, and whose high schools have been adjusted to a university of excellent standing, it cannot be said that secondary instruction is without organization, coördination, method, and purpose.

In closing his summary of this topic the Commissioner observes:

"It is important that the qualification of teachers and the curricula of secondary schools should correspond to some rational system of training. Here we have much to learn from European nations, in which secondary education is better organized, and adjusted more skillfully to the requirements of highly civilized and populous communities than in our own country." And again, "The keenness of international competition (in which we are becoming constantly more involved), the growth of our business interests, the development of superior instruction,—*i. e.*, that which occupies students up to twenty-four or twenty-five years of age—urge us to follow the example of European nations in the adaptation of secondary training. We are met at the outset of every such endeavor by the necessity for a fuller and more reliable presentation of the facts which must determine our adjustments. What is the proportion of scholars in each of these specified classes? What is the course which each pursues, and with what results? The demand for such information is increasing. Each institution seeks to know what others of the same grade are accomplishing, and those who meet for the general discussion of education realize the fatuity of counsels not based upon a knowledge of facts. In view of these manifestations I can but hope that the time is not distant when the teachers and officers of secondary schools will agree upon such a representation of the conditions of their work as the public interests demand."

Our survey of secondary instruction ought to embrace many schools, tabulated as superior schools for women, colleges, and schools of science, which are evidently not equipped for the work of liberal culture, or for a high order of special training. If these could be induced to rate themselves according to their quality, the role of superior institutions would be cleared of some amazing incongruities.

One of the most important facts in our recent history is the expansion of a few institutions which may justly be named superior. The recognition which this development receives abroad is sufficient evidence of its soundness and fullness. However satisfied we may be with ourselves, the satisfaction is enhanced by the favorable judgment of the best authorities; hence it comes to pass that our pride in such institutions as Harvard, Johns Hopkins, and Michigan University is strengthened by the knowledge that European savants are studying the details of their organization and publishing their achievements.

We must pass over the remaining topics of the comprehensive report here briefly reviewed, noting only the record of private benefactions to education during the year. The total ($7,440,224) is perhaps not large in proportion to our wealth, but the increase ($2,190,414) over the same for 1880 is encouraging.

As we close the volume the recent words of a German scholar came to mind with the sense of their special appropriateness to ourselves: "The glory which is achieved by martial exploits and conquests we may share with the most barbarous people, those with whom we should disdain comparison, the glory which is due to enlightenment, to moral elevation, can be shared only with the most civilized people, with the most illustrious benefactors of the race.

VALUABLE BOOKS.

ART.

The past year has been fruitful in standard books in almost every department of knowledge. Among the more prominent works on Art are: *Greece: Pictorial, Descriptive, and Historical,* by Christopher Wordsworth; new and revised edition, edited by H. F. Tozer, M. A.; with 450 illustrations of scenery, architecture, and fine arts; by Scribner & Welford, New York; price, $12.00. *Dumas's Art Manual,* an illustrated edition of the exhibitions of the world for 1882; containing about 250 original drawings, by J. W. Bouton, New York; price, $1.25. *A History of Art in Ancient Egypt,* by G. Perrot & C. Chipiez; edited by William Armstrong; with more than 600 illustrations; 2 vols. 8vo, 900 pages; by A. C. Armstrong & Son, New York; price, $15 50. *W. M. Hunt's Talks on Art,* compiled by Helen M. Knowlton; 8vo, 95 pp.; by Houghton, Mifflin & Co., Boston; price, $1.00. *Japan: Its Architecture, Art, and Art Manufactures,* by Christopher Dresser; with 200 engravings on wood, for the most part by Japanese artists; square crown, 8vo, cloth, gilt top; by Scribner & Welford, New York; price, $10.00. *Every-Day Art: Short Essays on the Arts not Fine,* by Lewis Foreman Day; with 80 illustrations; by Scribner & Welford, N. Y.; price, $3 00. *Illustrated Text-Book of Art Education,* edited by Edward J. Poynter, R. A.; each volume contains numerous illustrations for the use of students; by Scribner & Welford, New York; price per volume, $2.00. *English Painting,* by H. J. Wilmot Buxton, M. A., and S. R. Koehler; including an account of the earliest paintings known in England; 80 illustrations: by Scribner & Welford, N. Y. *Notes on the Principal Pictures in the Louvre Gallery at Paris, and in the Brera Gallery at Milan,* with illustrations, by Charles L. Eastlake; 4to, 443 pp.; by Houghton, Mifflin & Co., Boston; price, $2.00. *The Early Homes of Prince Albert,* by Alfred Rimmer; beautifully illustrated with tinted plates and numerous engravings on wood; 8vo.; by Scribner & Welford, New York; price, $8.40. *Modern Perspective,* by Wm. R. Ware; with portfolio of plates; 12mo, 321 pp.; by James R. Osgood & Co., Boston; price, $5.00. *Etched Studies for Interior Decorations and Domestic Furniture,* by H. W. Battley; ten etchings in portfolio; folio; by Scribner & Welford, New York; price, $20.00. *Lectures on Painting,* by Edward Armitage, R. A.; 29 illustrations by the author; 8vo; by Scribner & Welford, New York; price, $3 00. The same firm published *Practical Notes on Etching,* by R. S. Chattock, with 8 illustrations showing the stages and processes of the art; 8vo; price, $3.00. *Introductory Lessons in Drawing and Painting in Water Colors,* by Marion Kemble; 12mo; 94 pp.; S. W. Tilton & Co., Boston; price, 50 cts. *Modern Painters,* by John Ruskin; John Wiley & Sons, New York; price per volume, $3.00. *Water Color Painting, Flower Painting, Wild Flowers* (40 plates), *Garden Flower Portfolio* (40 plates); by Cassell & Co., New York; each series, $1.50. *Art of England,* by John Ruskin; John Wiley & Sons, New York. *Decoration in Painting, and Sculpture*; 5 vols.; 4to; by Scribner & Welford, New York; each volume, $3.00. *Photo-Micrographs, and How to Take Them;* illustrated; by Geo. M. Sternberry; James R. Osgood & Co., Boston; $3 00. *Decorative Placques;* designs by G. F. Barnes; verses by Mary E. Wilkins; 8vo; D. Lothrop & Co., Boston; $1.50. *Purgatory and Paradise;* illus. by Doré; Cassell & Co., New York; $10.00. *The Princess*, by Tennyson; illustrated by eminent artists; Houghton, Mifflin & Co., Boston; $10.00; also *Twenty Poems of H. W. Longfellow*, by the same publishers, illustrated by Ernest W. Longfellow; 50 engravings and portrait; $9.00. *Wild Flowers of Switzerland, or a Year Amongst the Wild Flowers of the Alps;* folio; 16 plates; by Scribner & Welford, New York; $15.00. *Original Etchings by American Artists;* 20 etchings; parchment. De Luxe, and regular editions, by Cass ll & Co., New York; parchment, $300 00; De Luxe, $125.00: regular edition, $20.00.

BELLES-LETTRES.

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FOREIGN NOTES.

GREAT BRITAIN.—*Elementary Schools, London.*—Some one pointedly observes that the London School Board is the greatest education parliament in the world; as such, its actions and deliberations are of universal interest. In the year ending October, 1883, by means of new buildings and the enlargement of old ones, the Board provided for 27,700 additional children. Mr. Buxton, the chairman, says in his annual address: "In face of the fact that, while the population of London is larger than that of Scotland, the school accommodation of London last year was only 527,000 as against 619,000 in Scotland; . . . the increase noted can not be regarded as an adequate effort to overtake the existing deficiency." It has been recently determined to erect twenty-five temporary iron buildings which can be afterwards removed to other sites, thereby minimizing the delay in accommodating children in growing districts, The table of percentages of average attendance is an interesting commentary on compulsion. In 1871 the percentage was 78.3; it fell off in the four years following, when large numbers of children were brought in by the compulsory law. These have now passed out of the schools, and a new generation has arisen, a large proportion of whom early acquired more regular habits; the consequence is a steady rise in the attendance, the average percentage for 1883 being 81.3 per cent. Mr. Buxton says, "Anomalous as it may seem, the more vigorously compulsion is enforced against absentees, the greater the tendency to an irregular attendance."

Considerably more than a quarter of a million children (311,695) are under instruction in the Board Schools, at a net cost of 1*l.* 11*s.*, and a gross cost of 2*l.* 15*s.* 10½*d.* per child. The teaching staff consists of 4,087 adult teachers, 1,107 pupil teachers, and 399 candidates. There are 2,753 children in industrial schools, received at the instance of the board.

Science and Technics.—It is difficult to keep pace with the rapid increase of provision for science instruction and technical training in Great Britain. At Huddersfield, which is a center of woolen industries, a technical school was opened Oct. 13. The school is a development of the mechanics' institute, which attracted the attention of Prince Albert in 1855 A citizen of Aberdeen, Mr. John Gray, proposes to erect a school of science and art for that town, provided the governors of Robert Gordon's college shall set apart a site on the college grounds for the purpose and assume the management of the school. The Department of Applied Science and Technology, University College, London, began the present session with enlarged facilities. Oxford and Cambridge are steadily increasing their provision for instruction in chemistry, physics, etc.; and St. John's College, Cambridge, has recently issued a notice which will, it is believe, place science candidates more on an equality with those who pursue the older studies. In brief, candidates for fellowship at the next annual election may submit dissertations or other writings as evidence of their independent work, the matter and form of the writing being left to their own discretion The electors wish it to be understood that their decision will be influenced, among other considerations, by the proficiency in some special subjects of candidates who do not submit any writings. Such candidates may at their own request be examined in their special subjects, provided they give full and precise information in regard to it by letter addressed to the master before a specified date. The principal of the Finsbury Training College announces that two Cambridge graduates in honors, and an undergraduate who is about to take his degree, have entered the college this term, and that a London B.A. will enter in a few weeks. Meanwhile the need is becoming more and more apparent of such a society as that formed last June with Prof Huxley as president, for the purpose of improving elementary training in science. The report of the late Cambridge higher local examination states that out of sixty-six candidates in the Natural Science Group, only two gained a first class, and thirty-one failed. The examiners' comments go to show that the poor results are mainly due to the endeavor to acquire the knowledge from books, instead of by observation and experiment.

International Exhibition — It is proposed to hold during the year 1884, says *Nature*, an international exhibition, which shall also illustrate certain branches of health and education, and which will occupy the buildings at South Kensington erected for the fisheries exhibition. The object of the exhibition will be to illustrate, as vividly and in as practical a manner as possible, food, dress, the dwelling, the school, and the workshop, as affecting the conditions of healthful life, and also to bring into public notice many of the most recent appliances for elementary school-teaching and instruction in applied science, art, and handicrafts. The exhibition will be divided into two main sections,—I. Health; II. Education,—and will be further subdivided into six principal groups. In the first group it is intended specially to illustrate the food-resources of the world, and the best and most economical methods of utilizing them. In the second group, dress, chiefly in its relation to health, will be displayed. Illustrations of the clothing of the principal peoples of the world may be expected; and a part of this exhibition will be devoted to the history of costume. In the third, fourth, and fifth groups will be comprised all that pertains to the healthful construction and fitting of the dwelling, the school, and the workshop, not only as respects the needful arrangements for sanitation, but also the fittings and furniture generally, in their effect on the health of the inmates. The most improved methods of school construction will be shown; and the modes of combating and preventing the evils of unhealthy trades, occupations, and processes of manufacture, will form portions of the exhibition. The sixth group will comprise all that relates to primary, technical, and art education, and will include designs and models for school-buildings, apparatus and appliances for teaching, diagrams, text-books, etc. Special attention will be directed to technical and art education, to the results of industrial teaching, and to the introduction of manual and handicraft work into schools.

Technical Instruction.— The Manchester Mechanics' Institute is about to set a good example by establishing classes for technical instruction in various handicraft.

Science Instruction.— In an address at the annual distribution of prizes at Gartsherrie Science School, Glasgow, Dr. Kerr, H. M. Senior Inspector of Schools, stated that he had just returned from Germany, where he had visited schools of all classes. Nothing astonished him more than the vast and costly provision for science teaching. In Hamburg, Leipsic, Berlin, Munich, and Chemnitz, he saw institutions on the most extended scale. The one at Hamburg had 80 highly trained teachers, and most complete accommodations and appliances. After a glowing account of what he had witnessed in Germany, the Inspector added that he believed the finest science school in the world was at St. Louis, in the United States.

Women Clerks.— The London School Board has passed, by a large majority, a motion to appoint a special committee respecting the employment of women as clerks of the Board. There was determined opposition, but it was contended that as the post-office admitted women to its service, work which they were competent to do ought to be open to them. In their record-book of welcome facts, this circumstance will be gladly written down by advocates of larger business facilities for women.

Oriental Languages.— On the 20th of Nov. last, the preamble of a statute was considered at Oxford University, by which natives of India are to be enabled to offer an Oriental language in place of either Greek or Latin in the "first public examinations." The preamble was carried by a vote of 54 to 16. The chief argument against the proposed change is, that if it be effected, Englishmen will want the privilege of offering French or German in place of Latin or Greek, to which the reply was, Why not?

FRANCE.—*Manual Training.*—The French school authorities show no disposition to relax their efforts for including manual training in the elementary schools. The Minister of Public Instruction has recently issued a decree creating a "certificate of aptitude" for teachers of manual work and outlining the examination for the same. Candidates must be at least twenty years of age (except by special permission), and must have taken a "superior license" or the bachelor's degree. For men, the examination embraces geometry, geometrical design, free-hand design, modeling, practical tests in chemistry, physics, or natural history (at the option of the candidate), the execution of a piece of work in wood or iron from a drawing (time allowed four hours), and the criticism of the work of scholars. For women, the examination includes a composition upon hygiene or domestic economy, an object lesson to a primary class, an ornamental design applicable to some species of feminine work, an elementary exercise in chemistry, physics, or natural history (at the option of the candidate), and a test either in cooking or in needlework.

Paris is foremost in the absolute provision for manual training in connection with primary schools. Over a hundred schools of that city are now furnished with workshops. Wood is the material worked upon. Each shop is provided with twelve planing benches and four lathes; one boy is placed at each of the former and three at each of the latter (one to work, and two to observe him) so that twenty-four boys are employed at a time. All boys above ten years of age in the schools to which shops are attached take part, and they do not seem to dislike it, though it involves extra labor, the instruction being given outside of the regular school hours; viz., from seven to half past eight in the morning and from half-past four to six in the evening. It is not expected that such training will make workmen, but it gives a new form of activity to the boys' minds and valuable exercise to their muscles. The establishment of a workshop with its tools and material costs about $240. Iron-working will soon be introduced into one quarter of the city where it has been specially requested.

The Minister of Commerce has ordered an inquiry into the industrial and commercial schools for the purpose of securing a full report as to their age, resources, courses and methods of instruction, their results as indicated in the subsequent careers of their scholars, and the views of their managers, teachers, etc., as to the means of rendering them more efficient.

GERMANY.—*Over-pressure and School Hygiene.*—For the time being the question of classics or non-classics have given place to that of over-pressure in schools. The evil is manifested particularly in gymnasien, real-schulen and special schools, as those of agriculture. Within the last two years, commissions have been appointed in six German states to investigate the causes of the evil. As set forth in their reports, these causes are in the main excessive study-hours both at home and in school, too many branches of study, and requirements above the mental capacity of youth. For the agricultural schools, twenty-four branches are enumerated, which students entering at nine years of age and pursuing the course six years are expected to master. As the result of the reports, decrees have been issued by the governments of Prussia, Saxony, Würtemberg, Hesse, Bavaria, and Alsace, which are designed to check the overpressure. The decrees deal also with school hygiene, a subject which is being more and more considered throughout Germany. This growing interest is mainly due to the publication of Dr. Cohn's investigations made in Breslaw in 1865–66, as to the effect of school-life upon the eyesight, muscles, nerves, etc. It will, perhaps, be remembered that Dr. Cohn found the increase of near-sightedness to be in proportion to the increased strain upon the eyes by school-tasks. In village schools the per cent. of near-sighted children was 1.4; in gymnasien, 26.2 per cent. Dr. Cohn showed farther that nearly every hygienic requirement was violated in the construction of school furniture. Great improvements have been made in school furniture since the publication of these investigations, and the German governments generally, are legislating for the suppression of the hurtful conditions noted. Careful experiments have recently been made in the forty government institutions of learning in Saxony for the purpose of determining the atmospheric conditions and the best means of heating. According to the results which are reported by Dr. Reinhard of Dresden, president of the government medical faculty, heating by hot air secures to the room a more constant temperature and a smaller proportion of carbonic acid in the air. The air is therefore purer and healthier, and its hygrometric condition less variable. The Minister of Public Worship has ordered further experiments in this direction.

ITALY.—Primary education is in a backward state in Italy, especially in the rural districts of the south. This is owing partly to the miserable condition of the peasants, which makes it nearly impossible for the children to attend school or to profit by ordinary school instruction. The need of a change in this respect is emphasized by the eagerness evinced by the workingmen of the cities to make up in the adult schools for the neglect which they suffered in childhood. The progress of secondary schools is relatively greater than of primary.

SERVIA.—In 1882 Servia was reported to have about 600 primary schools, or one school for 3,000 inhabitants. Only one-tenth of the children attended these schools. The education of girls is in a much more backward state than that of boys. The present minister of public instruction, M. Stoian Novakovitch, has established a journal which serves as an organ for his department. From a recent article in this journal we learn that there are two normal schools for male teachers, with 196 students, and three gymnasia, with 1,103 students. This makes about 1,000 classical students among two millions of men. There are besides twenty-five pro-gymnasia, with only four classes, having 4,727 students. Superior education is represented by the institution at Belgrade This is not really a university, since it does not grant Doctors' degrees. It simply prepares young gentlemen for liberal careers. Last year there were 172 students, —86 in law, 21 in history, and 41 in pure and applied science; the rest were not specified.

BELGIUM.— Universal suffrage, limited by an educational test, is now the law of Belgium for municipal elections. An examination of the 8,357 militia-men enrolled in 1882 showed that 22 per cent. could not sign their names correctly. A further examination of those who had been at school from four to six years, showed an equally astounding amount of ignorance. The immediate result has been the establishment of schools for electors at Antwerp, Brussels, Ghent, and other large towns.

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[illegible]DUCATION.

[illegible] — MARCH, 1884.

THE [illegible] ONLY [illegible] FOR [illegible] THE PRESENT EMERGENCY.

BY [illegible] JOHN EATON, WASHINGTON, D. C.

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Wendell Phillips

MAR 25 1884

EDUCATION.

No. IV.—March, 1884.

THE NATION, THE ONLY PATRON OF EDUCATION EQUAL TO THE PRESENT EMERGENCY.

BY GEN. JOHN EATON, WASHINGTON, D. C.

Since the days of the great George Mason, of Virginia, there have never failed to be patriots who believed that African slavery was a peril to our institutions. They sought for peaceful remedies, and when the great and terrible war burst upon the land their conscience did not forsake them; they stood by the country and saved the Union. Nearly twenty years have passed since the declarations of universal freedom; and the slavery of ignorance remains with all its perils. Joy is increasing in all the land that man no longer has property in his fellow-man; yet we must confess that the evils threatened by African slavery are only partly averted. The millions in ignorance are not free as American liberty must make free; their ignorance invites idleness, vice, crime, and petty demagogism to become their masters, and by ruling them to assail the foundations upon which rests the very citadel of our liberties.

We are among those who believe in all the possibilities of our destiny for our posterity and for the other nations of the earth; but we know that a house divided against itself cannot stand. Intelligence and virtue are ready now, as always, for the defence of our freedom against all the hosts of ignorance and evil. At this point in our national affairs the irrepressible conflict remains. We desire to consider how it may be terminated by measures of peace and moderation, and not eventuate amidst future generations in another catastrophe more dire and calamitous than our own civil war. We offer no Utopian scheme. We do not come as destructives, purposing to tear down everything; we do not propose to arrest the growth of our institutions; but we invoke greater activity on the part of all the great agencies that enlighten, or mold, or preserve society for good.

Among the foremost of these is the family; and where outside of the borders of America is there a larger proportion of families to the whole population? Where have the better aspirations and forces of the family equal opportunity? All the possibilities of American citizenship are before every child in the American family. How many hallowed home influences guard the life of infancy, train its earlier activities, mold its power to high purposes and noble action! But, alas! how many homes are broken up by the death of father or mother, or by the weakness or criminality of the parent, and childhood's tender years exposed to the perils of orphanage or thrust into the midst of vice and crime! Society, in its benevolent action, already counts these children by tens of thousands. That noble effort of Brace and his coadjutors in New York alone has taken over 60,000 from the perils of city streets to the safeguards of country homes. Our reform schools and orphan asylums give most appalling testimony to the aid our home-life requires, and show the disproportionate increase of neglected children. The provision of summer parks, summer excursions, and infant sanitaria are beautiful efforts to do what so many families cannot for their children. All the efforts of organized and enlightened charity are not equal to the demand. Amid vital statistics everywhere, Rachel mourns her infant child. Nearly half the children die in infancy, and come not to the chances of future good and evil.

Near the family is the church, that other divine institution, established for man's enlightenment in his duties to God and to his fellowman, and for the conservation of the best interests of society. For this great institution, too, this assembly invokes greater activity; and we believe that the American church is not hindered but quickened to greater power in its separation from the State; we believe thereby it occupies an ideal position toward which its wisest adherents the world over would have it move as the sphere in which it may most serve man and honor God. Where else has the church greater respect, or more power over the consciences and lives of the people? Where else has its press and pulpit greater influence? Where besides, in the same length of time has it garnered a richer literature? Where are its schools on the Sabbath more effective? And yet, according to the last well-authenticated figures, their membership numbered only about seven millions and a quarter. In what nation under the heavens have its schools for all grades more freedom and gained such endowments, or given promise for greater future triumphs?

The schools of theology, including Catholic and Protestant, number 142; have 633 professors, 5,242 students, and have invested in buildings and grounds $6,221,607. The productive funds of the Protestant schools amount to $8,537,683, and yield an income of $576,897. All the investments in all forms for instruction in the professions of law and medicine bear no comparison to these figures.

But the churches have achieved far greater results in the provision of college instruction for men and women. Of these institutions announced as belonging to one or the other denomination of Christians, Protestant or Catholic, there are 438, with 4,543 professors and 60,947 students. The value of their buildings, grounds, and apparatus is $31,898,510; the amount of their productive funds is $23,403,945, yielding, together with tuition, a reported income of $3,068,554. In this connection it is interesting, however unsatisfactory, to remark that the productive funds invested for the education of women are not one-fiftieth of the amount similarly invested for the college education of men.

Of that other grade of institutions established for secondary instruction, such as high-schools, academies, and preparatory schools, there are reported under denominational control 837, with 4,205 teachers and 73,770 students, owning in buildings, grounds, and apparatus $10,779,334, and having in productive funds $1,684,359.

In these three classes of schools,—those of theology, and those for secondary and superior instruction,—we find the grand total of 139,826 students, and an investment in property and productive funds amounting to $82,195,728.

But we must pass to another great and special work of the churches. Rejoicing in the American Sabbath for man's rest and freedom to worship, the several religious denominations acknowledge it to be their special responsibility on that day to preach the gospel of man's redemption. Learning and eloquence may well rejoice in the power of their pulpits. The multitudes whose attention they command in places of worship no cursory glance can number, but our purpose requires a nearer view. We have not the data expected from the great census of 1880; but, on the supposition that the ratios for the decade, 1870–1880, are substantially the same for the increase of population and for the extension of church work, the following statistics will be sufficiently accurate for our argument.

Great as is the Sabbath worship on the first impression, allowing that there are now 28,170,000 sittings in the church edifices of all the various denominations, there would be required 21,830,000 additional sittings to accommodate the total population of 50,000,000,[1] which, at an average expense of $12 per sitting, would cost $261,960,000. To supply the preachers required, at the usual average of one to three hundred and seventy-five persons, there would need to be an addition of 58,213 clergymen. Now should the churches undertake to give these men a preparation of only three years, at present rates of aid and with present facilities, it would cost, over and above all that the young men could do for themselves, at the rate of $100 per year for each individual, $17,463,900; and their first year's salary as preachers, should they be able to live on an average of $500, would demand for its payment $29,106,500. The total of these three items for the supply of the preached gospels to all of our 50,000,000, not now having sittings, would cost $308,530,400.

Another special means of promoting religious progress is the circulation of books, newspapers, and especially the Holy Bible. Great and excellent as is this service, as now rendered, how many hundreds of thousands of souls are unreached by either agency! It would require a circulation of 10,000,000 of religious papers to furnish one to each family. When the spirit of American civilization invites religious organizations to a work so vast, so far beyond their present means and efforts, so out of proportion to all that they are undertaking, would there not be somewhat in the nature of the cruel or absurd to demand of our churches, as some would do, that they should assume the entire control of the education of the people in all its forms under all conditions? Or would the idea of those who advocate exclusive church direction of education limit that great work to a few, or to the ruling classes, or to those who could pay,—an idea consistent only with the great illiteracy and degradation of the masses.

We believe our New England fathers wisely sought a better way. Studying profoundly in the light of the divine word all the data in human experience that they could command, they finally discovered and accepted their well-known principles of separation of church and state, liberty, and rights of conscience and person and property. They also became convinced that the preservation of these principles which they so dearly cherished could be assured only by the training of the young, to whom they were to be committed, and that this education could only be made universal and sufficient for a free people by that other institution, the State, which they cherished as divine while announcing its total separation from the authority of the church. They welcomed all voluntary action by the family and by the church, and we have seen how conspicuous the results attained; but they wisely committed not to the church, with its manifold divisions, but to the State in which only resided the power that could touch all the people and tax all the property within its borders, the guarantee of the education of all the children. So they expected the family to teach justice; so they expected the church to enforce justice between man and man: but they reserved the guarantee of this justice to the civil organization in which was embraced the entire community. Thus they expected the family and the church to do their utmost for the education of society; but the final assurance, the absolute guarantee of this education, supremely necessary to the continuance of free institutions, they laid in the very foundations of civil government. Their conceptions and practices have so commended themselves to American lovers of liberty that in every State, and in every territory that has any law, there are legal provisions for the public education of the children.

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[1] No attempt is made here to take into account the increase of population in the last two years, or other variations, such as the number who might stay at home by reason of age or sickness, which would be possible with greater space.

The schools of the people, the common schools, are justly and widely regarded with the profoundest interest. Foreign statesmen and publicists have not looked into them in vain for the sources of many of the excellencies of American life. May it be always and everywhere true, as the great Webster was able to testify to an English inquirer, after saying that he had been familiar with the New England system of free schools for more than fifty years, and avowing his hearty approval when he declared: "I owe to it my own early training. In my own recollection of these schools there exists to this moment a fresh feeling of the sobriety of the teachers, the good order of the school, the reverence with which the Scriptures were read, and the strictness with which all moral duties were enjoined and enforced. In these schools, or it may be partly by my mother's care, I was taught the elements of letters so early that I never have been able to remember a time when I could not read the New Testament, and did not read it. Many moral tales and instructive and well-contrived fables, always so alluring to childhood, are still perfectly preserved in my memory. And in my own case I can say that, without those early means of instruction, ordained by law and brought home to the small villages and hamlets for the use of all their children equally, I do not see how I should have been able to become so far instructed in the elements of knowledge as to be fit for higher schools. In my opinion the instruction communicated in the free schools of New England has a direct effect for good on the morals of youth. It represses vicious inclinations; it inspires love of character; and it awakens honorable aspirations. In short, I have no conception of any manner in which the popular republican institutions under which we live could be preserved, if early education were not freely furnished to all by public law in such forms that all shall gladly avail themselves of it. . . . I may be permitted to add that, in my judgment, as the present tendency of things almost everywhere is to extend popular power, the peace and well-being of society require at the same time a corresponding extension of popular knowledge."

The favorable side of this public school system cannot be contemplated without gratification. In every State, by the provision of a State university or an agricultural college, the ladder of learning, with its foot standing in the gutter, invites every child, step by step, by a free course to the highest instruction. The conception of the theory is an honor to the human mind. None are excluded; every one is invited to some measure of instruction, be he sound in health, or be he feeble-minded, or deaf, or dumb, or blind. What blessings are offered to the poor! Here is a family struggling for subsistence, and has no money to pay a penny for the instruction of its children that, perhaps, number four,—one, of a sound mind, goes to the public school, and on, if he has the capacity, through the collegiate course, and is capable of high trusts and responsibilities; the second, an idiot, is taken to the school for the feeble-minded, and becomes self-supporting; the third is blind, and the State provides him the school; the fourth is deaf and dumb, and the State offers the school and the Nation the college. It is a glory of American law that what is left elsewhere to charity, for these unfortunates here has the certainty of public administration.

Why should we not, glancing over the annual result of educational work in the country, congratulate ourselves that there are 48 schools of law, with over 3,000 students; 120 schools of medicine, with 14,000 students; 364 universities and colleges, with nearly 60,000 students and $83,000,000 in property and funds; that there have been bestowed in the last ten years over $61,000,000 by private persons of wealth for education; that there are 220 normal schools, with 43,077 students, with annual public appropriations of $872,726; and that annually there are nearly 10,000,000 of children in attendance upon the public schools, and an expenditure of $80,000,000 from the public treasury.

But we must not pause here; we must look at the reverse side.

New England to-day has but one college student, male and female, to every 157 families, whereas at the end of the first twenty-three years of New England history, or when there were 20,000 souls all told in the settlements, there was one university graduate to every forty families. May we not say, hence such wisdom in laying the foundations of those States. When will the educated classes anywhere attain the same relation to the whole body of the people? Against the attendance upon the public schools there is the non-attendance of 5,754,759. Allowing that these odd hundred thousands are in private schools that are not reported, there remain 5,000,000 children of school age untaught. To furnish these sittings in buildings, at the usual average of $20 per seat, would cost a hundred millions in money. To furnish them teachers, would require an increase of 30,000 of the teaching corps, and a single year's preparation of these teachers, at the average rate in New York normal schools, would cost over a million of dollars, aside from other expenses incurred by each person. The pay of these 30,000 additional teachers for one year of ten months, at the rate of $32 per month, which is the average throughout the country, would amount to $9,600,000; add to this the items for preparation and school-house sittings necessary for the supply of these non-attending school-children, and you have a grand total required for the first year of $110,000,000.

There has been an attempt to raise a laugh at the proposition of Hon. Senator Logan to appropriate $60,000,000 in aid of education; but I give you here figures which cannot be invalidated, showing that his proposition falls $50,000,000 short of the sum which would be required to furnish all our school-children now out of school sittings and teachers for a single year. Mr. Senator Blair, in his examination of this point, in his recent speech, considering that Texas has a school-period of only six years, states if the school-life were properly lengthened in that and other States, the present reported school population of 15,302,862 would be increased to 18,000,000. But you are aware that the legal school age is hardly the same in any three States, and while the school year is ten months in some, it is only two or three months in others. The proper increase of the school age would add greatly to the school population to be taught, and thus to the number of teachers required, while the proper addition to the number of days taught in the year would proportionately increase the expenditure for instruction.

In our cities we are accustomed to expect the best teachers, best school-houses, best methods and best supervision; but laws making attendance obligatory and a sufficient number of sittings and teachers are wanting, and on an average two-fifths of the children are not enrolled in the schools. Here are forced upon us the terrible problems encountered in older civilizations and more dense populations. These deficiencies, moreover, are not equally distributed through the entire country, but are mainly concentrated in the Southern States, where the late war left the most disastrous effects. The white people were impoverished, and the colored people entered upon their liberty in total destitution. The setting up of the public-school system was one of the crucial tests of the revolution that was transpiring, and was one most obnoxious to the whites generally. All their antecedent notions rose up against it, but in spite of the prevailing poverty, and indifference or opposition, the public-school idea has made progress.

The sixteen States and the District of Columbia, where slavery prevailed, having a total school population of white children of 3,899,961, had, in 1880, 2,215,674 whites enrolled in schools, and with a colored school population of 1,803,257, had 784,709 blacks enrolled, and expended $12,475,044. This money, it should be remembered, is divided per capita, with substantial equality, without distinction of color, in all the States excepting Kentucky and Delaware. In the former State a new tax levy is proposed, which shall be divided equally, and in Delaware two thousand dollars are now appropriated for the colored schools.

In considering the local necessities of the South, embarrassed by the ignorance of the colored population, it should not be forgotten that there are now conducted for the benefit of the colored people 44 normal schools, with 7,408 students; 36 schools for secondary instruction, with 5,237 students; 15 universities or colleges, with 1,117 students; 22 schools of theology, with 800 students; 3 schools of law, with 33 students; 2 schools of medicine, with 87 students; and 2 institutions for the deaf, dumb, and blind, with 122 students. These institutions for higher instruction are mainly due to the benefactions of Christian benevolence, and it is claimed by the several denominational agencies at work that they have expended in this direction some $10,000,000. In the same regions it is known that the Nation expended through the Freedmen's Bureau, in behalf of education, $5,262,511. Here, too, the great Peabody benefaction has been at work, with rare skill, aiding in educating both blacks and whites, and has expended $1,191,900; and now the Slater fund of $1,000,000 is provided to give greater efficiency to the education especially of the blacks.

Why have the benevolent of all classes; why have the friends of humanity, of order, of law, of progress, been so profoundly moved by anxiety; why have the consciences of so many people been urging the provision of education for these people? The question is one we cannot pause to answer. One thing is clear,—they have sought no harm to either race; they have not acted in antagonism to any of the great agencies for the renovation and blessing of society, the family, or the church, or the cities, or States of that region; but their great work has been in relieving burdens that would paralyze these agencies, and in bringing to their aid that instruction and training, those precepts and examples, that higher and better life on the part of every man, woman, and child affected by their influence. They believe profoundly that,—

> "Lust and avarice and anger
> Creep in the black jungles of man's ignorance."

In their studies of social science they read the story of "Margaret, the Mother of Criminals," wherein appear the results of neglecting a single family living on the outskirts of a New York village. In seven generations there were 709 descendants, of whom, according to the careful investigations of Mr. Dugdale, 280 were adult paupers, 140 criminals and offenders (guilty of seven murders, theft, highway robbery, and nearly every offence known in the calendar of crime). These descendants cost society for their support or punishment $1,308,000, "without reckoning," as Mr. Dugdale observes, "the cash paid for whiskey, or the entailment of these evils upon posterity, or the incurable disease, idiocy, and insanity growing out of their debaucheries, and reaching further than we can calculate."

Amid these masses of figures you will not expect me to give the statistics showing the depreciating influence of ignorance upon agriculture, upon the mechanic arts, upon commerce, upon all of the great activities by which society exists; nor will you expect me to trace in detail the share that ignorance, as a separate factor, has in the degradation of the pauper classes, or in the increase of criminality and their cost, or in the propagation of disease, and in the increasing insecurity of health and life; but I cannot dismiss this vast ignorance which we have contemplated without a word in reference to its possible political evils. Omiting any reference to the influence of illiteracy during minority, or any bearing of the illiteracy of the female adults, the late census shows us that there is a great army of 1,908,310 adult males or voters who cannot write,—an army nearly double that ever in the field during the late deplorable civil war. You will certainly excuse me from any delineation of the horrors of the devastation that might follow their united and concentrated efforts against the peace and order and well-being of society. I simply call your attention to what may be the injurious effect of their silent action as voters at the polls. In each of twelve States there are more than one hundred thousand of these voters, and in eleven States these illiterate voters outnumber the votes cast by either of the political parties in the last presidential election; thus, should they unite under one infatuated leader, they would have absolute control of State legislation, of the State offices, and of the election of twenty-two members of the United States Senate and of all the members of Congress from those States. Again, running down the columns of these direful and alarming figures, and taking into account the votes of political parties in the same election, we find that in all but five States in the Union there are enough of these illiterate voters, by their united action, to have reversed the result of that election in each of these States, whatever it was. The press and public mind are occupied with questions of tariff, questions of capital and labor, questions of corporations and private rights. Do they sufficiently consider what material these ignorant masses offer for the destructive explosions that have occurred in connection with these questions? Does the press consider that none of its information, none of its pleadings, none of the considerations it presents, can be read even by the 6,001,745 illiterates ten years old and over, and that all its voices of warning and instruction fall for them on deaf ears?

Before passing from this class of considerations, you will pardon me for reminding you that many of our intelligent people show an indisposition to participate in political action, and that generally the more ignorant can be rallied to do what their leaders desire; and, in the light of this fact, I beg to turn to the *Tribune Almanac* for 1882, and, after adding up the column of votes cast, to draw from it the number whose votes were not cast or were not counted in the last election; the result gives a total in all the States of 1,795,568, or more than half of the number who voted on either side, and, as a rule, numerous enough in each State to have reversed the result of the election.

No summary of points of special interest in education from a national view should omit the condition of education in the territories. Here we are confronted with the Indian problems, all of which it is easy to be seen could be speedily solved if the 60,000 Indian children should be educated for a few school generations. In the territories, too, are the children of the 30,000 Alaskans without legal provision for their education; here, too, is the large Spanish and substantially foreign population of New Mexico, with little or no provision for instruction in the English language or American thought. Then, too, the 150,000 polygamists, who, in the face of the Edmunds Bill, are said to have increased this year ten per cent. by immigration from foreign countries, have children that especially need efficient schools conducted in the American spirit. Over all these questions in the territories Congress has supreme, unquestioned control. Besides, if we are to receive annually, as last year, a total of three-quarters of a million of people of diverse nationalties, though they have only fourteen per cent. of illiterates, all should be surrounded with the institutions and sources of information that may aid them in conforming to our ideas and customs, and there should be no lack of school privileges for their children. Again, what shall the children do, in the absence of apprenticeship, to give skill and character to handicraft? is asked in every educational discussion. The Nation has endowed a college of agriculture and mechanic arts in each State; and these institutions are all, with a measure of merit, but with varying success, making their contributions to the solution of the problem of industrial education. But the needed elementary aid is yet wanting.

Passing from point to point thus abruptly along these outline views that open here and there into vast vistas that we have no time to study, allow me to ask, What are you going to do about it? Will you allow the ship of state to float on as she is, trusting that she and all she carries is safe so long as we hurrah loud enough and display plenty of bunting? Shall we leave the care, the anxiety, to the agencies now operating, those that we have enumerated, and the great voluntary activities of temperance, and science, and reform? Have we not seen how each, and finally all, of the agencies are unequal to the task of universal education, which, like spring, shall leave no corner of the land untouched? Has there not been in our hearts and on our lips one great patron, the Nation, not yet sufficiently invoked, but the only one equal in power and ample in means to meet the present emergency, — not by displacing or by controlling either family, church, or State, or voluntary activity, but by its patronage, by its moral influence, by a reasonable disbursement from its treasury, accompanied only by conditions that shall make its expenditure honest and efficient? This is the patron whose aid given to the States would lift the burdens impossible for all the other agencies to bear, and by its aid stimulate them to greater endeavor by assuring their hope of success.

Clearly this aid by the General Government to education can do no violence to that constitutional provision which authorizes Congress to act for the general welfare, and under which so many millions have been so freely voted to roads, rivers, and internal improvements. The policy of this aid accords with the traditions and practices of the Government from its foundation. Out of it came the great grants of land to common schools and to universities that have had such incalculable influence upon the destiny of the newer States. In accord with it, too, was that wise grant in aid of colleges of agriculture and mechanic arts. The General Government is the largest patron of science. Under it more researches are conducted than under any other agency among us. For the enlightenment of the citizen it carries on one of the largest printing establishments in the world. Its aid in the establishment of libraries reaches millions of dollars. This sending abroad of light and knowledge to every nook and corner where the citizen lives is not the centralization of power, but the reverse. It aids every locality to judge and act intelligently for itself. Further, the General Government aided the establishment of the first institution,—that at Hartford,—for the instruction of the deaf and dumb, and has crowned all the institutions of that class in the several States by that noble one, the Deaf Mute College at Washington, the first of its rank in the world, be it said to the honor of American statesmen. When the blind had in vain sought aid in obtaining literature elsewhere, the General Government gave a permanent fund of a quarter of a million for a printing house for the blind, and those in every congressional district may have the benefit.

In 1836, when the national treasury was more than full, a surplus of over $20,000,000 was disbursed among the States, receiving it as a loan, and in a number of instances was used by them to increase their school funds,—thus promoting that revival of education which was then arousing the indifferent and overcoming the hostile, and specially contributing to the preparation of the generation which saved the Union.

Only the General Government can do justice to all the interests affected by that great river, the Father of Waters; only the General Government has been found equal to cope with that terrible plague, the yellow fever. So only can the Nation meet the greatness of the present emergency by adequately aiding existing agencies, and enable the people to cope with the plague of ignorance, more fatal to human good than any leprosy which can assail the body.

Besides, we must not forget that the Nation, by the older constitution, must guarantee to each State a republican form of government, and by later provision we are aware that the Nation has assumed to protect the citizenship of those formerly slaves. And do we not know, if the theories are sound on which rest our institutions of freedom, that, in the execution of either of these trusts, the Nation would in vain marshal armies till they were as oppressive as those of the old world, and that equally in vain it would add statute to statute, if the people themselves,—the people resident in the locality in peril,—do not possess or do not acquire that intelligence and virtue without which a republican form of government and the enjoyment of American citizenship are absolutely impossible?

It was the belief of the fathers, and it is a truth by which we must abide, that the free, intelligent choice of the people is our only safety. If the Nation may use its navies and armies to guarantee this safety and fail, as it must if no other means are employed, may it not rightfully, at least as a generous patron, bestow the means to aid the States in building school-houses or in paying teachers, whereby the people may be so enlightened that they shall come of their own free will to know, cherish, achieve, and defend this result. Is not the great patriotic thought and the increasing anxiety for the republic strongly gravitating to this conclusion, and pointing to our national statesmen as the men on whom the final responsibility for adequate action rests?

The fathers of the republic, before they had gone the half of twenty years, saw the defects and weaknesses of their first action, and achieved their greatest triumphs of statesmanship in a careful revision of their first steps and in giving affairs a new departure. Have not our statesmen, in the great changes of the last twenty years, seen the imperative need of another revision, and discovered the opportunity by giving to universal suffrage the guarantee of universal intelligence to add new assurances to the prosperity and continuance of our liberties and new glories to American statesmanship? Then shall

"Columbia, Columbia, to glory arise,—
The queen of the world and the child of the skies;
Thy genius commands thee, with rapture behold,
While ages on ages thy splendors unfold."

APPLICATION OF THE PRINCIPLES OF PSYCHOLOGY TO THE WORK OF TEACHING.

BY JOHN E. BRADLEE.

ANALYSIS.

Introduction.—Importance of the subject.

I. Nature of the Mind.

II. Distribution of the Mental Powers.

III. Psychological Principles which Apply to the Work of Teaching.

1. The intellectual faculties are distinguished from each other by the order of their development.
2. The activity of the higher powers is conditioned upon the activity of the lower.
3. The mind tends to repeat its activities.
4. The best attention is that which is given spontaneously.
5. The mind naturally proceeds from the specific to the general, and from the concrete to the abstract.
6. The learner should advance from the simple to the complex.
7. The mind should be conducted to the unknown through the medium of the known.

IV. The Practical Work of the Teacher.

1. Remarkable progress made by the child before the school age is reached; schemes for continuing it; Pestalozzi; Froebel; Use and Misuse of Object-Lessons; Necessity of toys to the child; Summary of aims in Primary Teaching.
2. Training the Senses; Forming Habits of Observation.
3. Order of Studies; Can Study be made Attractive? Bain's View; The Opposite Opinion; The Love of Knowledge; English Grammar; Arithmetic, The Elements of Science and Natural History.
4. Training the Memory.
5. Importance of Language Studies.
6. Formation of Habits of Independent Investigation.

V. Concluding Observations.

1. The qualities of mind and character which are required by the scholar must be in the teacher.
2. Alternation of work should be provided for.
3. The teacher must study his pupils.

ESSAY.

The mind is self-active. Whatever influence is to be exerted upon it by educational processes must be in accordance with its nature and laws of growth. These must be clearly apprehended if we would avoid friction and waste in our efforts to train it to its highest perfection. It is not a storehouse to be filled; it is not a machine to be est in motion; it is not an organism to be vivified. It is a spiritual principle already putting forth its own energies, and working out its own ends, when it first comes within the reach of the educator. He adds to it no new powers, and he can modify and augment its activities only by furnishing the materials and supplying the normal conditions of growth. The mistakes and shortcomings of modern education can largely be referred to a false philosophy. Verily, he who would train the mind must understand its nature. Not more obviously should the musician possess a knowledge of the instrument upon which he is to play, as well as the music to be performed, than the teacher should understand the mind which is to be instructed as well as the subjects to be taught.

I. In order to make an intelligent application of the principles of psychology to the work of teaching, we need to inquire first concerning the nature of mind itself. We hold that it is a spiritual principle, exerting its energy in various forms and through a material organism, but that all these manifestations are the products of the same indivisible, spiritual agent. While we admit that the soul is developed along with the powers of the body, and is dependent upon them for much of its knowledge and energy; while we admit that it is only known to our senses in connection with the material structure which it inhabits, we still maintain that it is a spiritual entity, and is to be trained and developed by spiritual agencies. Not only does the soul receive its impulse to action from within, urged on by its own energy, while matter is of itself inert; not only does it distinguish itself from matter, and even from the bodily organism which it employs, but its phenomena are totally unlike those which pertain to matter. This is a point of prime importance. Materialistic philosophy has always tended to artificial and materialistic methods of intellectual cultivation, and one leading authority has even affirmed that, as all mental activity consists in molecular changes, we have, therefore, in order to produce the highest and most perfect mental development, only to train each muscle, nerve, and cell to its fullest activity by physical exercise. We repudiate all such doctrines. Whatever the importance of a sound and healthy body, and we would by no means underestimate it, a trained and disciplined mind is quite another thing and is obtained in a very different way.

II. We pass to inquire, then, what are the powers of mind which the teacher is to develop. All the mental activities may be classed under three divisions, — the Intellect, the Sensibility, and the Will. Under the first of these are comprehended all the processes of thought and knowledge, commonly designated as the perceptive, the representative, the elaborative, and regulative faculties. Under the Sensibilities are included the emotions, affections, and desires, and under the Will the choices and volitions. No education can be complete and symmetrical which does not provide for the training and refinement of the mind in each of these distinct modes of activity. Each has its own distinctive and characteristic phenomena, and obeys certain fixed laws. Our efforts at mental training must always be in accordance with these laws, and should be adapted to stimulate the form of activity desired.

III. What are the psychological principles which apply to the work of teaching?

1. *The intellectual faculties are distinguished from each other by the order of their development.* First the presentative or perceptive faculty is called into exercise; next comes the representative, then the elaborative or discriminating faculty, and last of all the regulative faculty. It is not asserted that one of these will attain its perfect development before another form of activity appears; but that, in any young person, the first will have reached a higher stage of development than the second, and their progress towards maturity will be in the order indicated. The senses will be found to be perfectly developed in a child ten years of age, and the perceptions, though often incomplete, will be clear and distinct, while his power of generalizing and logical inference will be very crude and feeble. The growth of a child's mind is like the opening of a flower,—one after another its faculties unfold and expand under favorable influence. It is impossible to reverse this order, and to attempt to do so in our educational work is like tearing open the bud in a vain attempt to produce a premature blossom.

2. *The activity of the higher powers is conditioned upon the activity of the lower.* Representation necessarily employs the materials furnished by presentation; judgment, comparison, abstraction depend upon tributary acts of the faculties which precede them. In other words, imperfect and feeble activity of the lower powers will vitiate and weaken the processes which succeed and are above them. Thus people often arrive at false conclusions because of insufficient observation, and the imagination may be dwarfed in its development by the exclusion of those subjects which should furnish it with its appropriate materials. As the tree is invigorated by watering its roots, so whatever nourishes and exercises the lower mental powers will eventually stimulate and exalt all which are above them.

Moreover, it is a law of the mind that the feelings and will can only be reached through the intellect. Would we persuade a man adopt a certain course of conduct, we seek to influence his will by arousing his feelings ; and these in turn are enkindled by the intelligence. Knowledge precedes feeling, and feeling precedes action. Impassioned appeals are sometimes made to people to be interested in a philanthropic movement. A more philosophical, as well as a more effective way, would be to furnish the understanding with facts and arguments adapted to awaken their interest. A child cannot like a study simply because he is told that he should do so ; nor can he apply himself vigorously to that in which he feels no interest. But let facts or objects fitted to stimulate his curiosity be presented, and it is wonderful how quickly his emotional nature will respond.

3. *The mind tends to act again in the same way, or in a similar way to that in which it has acted before.* Whatever it has done once it inclines to do again, and with an ever-increasing facility. "Custom makes all things easy." This disposition of the mind to repeat its activities has been ably shown by President Porter to be the ultimate principle of the association of ideas, and to be identical with the law of habit. Every act of the mind is complex, and when from any cause one of the original elements is again present to the consciousness, it will tend to recall the other elements till the entire original act will be reproduced. Hence the importance of repetition, both to fix facts in the memory and to acquire facility in mental processes. So, also, in the formation of habits,—whether mental or moral, whether good or bad,—the same fact of repetition, joined perhaps to certain original aptitudes, is the moving cause. Mankind, one and all, tend to repeat their activities.

In this inclination of the mind to reproduce its actions, two subordinate and opposing tendencies appear. The first is to narrow the range of the activity till it becomes mechanical and runs in a groove. Children often illustrate this liability in committing to memory ; and men, whose employment necessitates a concentration of the attention on one operation, often seem to lose the power to perform any other. On the contrary, the recurrence of the thoughts to certain topics, judiciously permitted, not only increases the vigor of the mind, but also discovers an importance and significance in some great principle, r truth, not at first apprehended. Thus Newton dwelt upon the subject of gravitation till it possessed for him a sublime significance which it has perhaps had for no other person. No small part of self-culture depends upon a judicious guidance and control of this proneness of the thoughts to repeat themselves. Wisely employed and regulated, it makes one a philosopher or inventor; misdirected, or passively indulged, it renders its victim an imbecile or a "crank."

4. Closely related to this law of repetition is another ultimate fact of mental science which has an important bearing upon the philosophy of education. It is, that *the best attention is that which is given spontaneously.* This is preëminently true of children and youth who possess the power of voluntary attention in a very limited degree. That which excites in them a natural interest, they will understand and remember; that which possesses no such interest for them, is imperfectly apprehended and quickly lost. Hence the importance of such a presentation of knowledge as shall win the attention and afford pleasure. But in the case of those subjects which do not readily appeal to the interest or preference of the learner, nature has also provided that repetition and familiarity shall make attention easy, if not spontaneous. When Henry Ware was in college he wrote in his diary, "*Resolved,* That I will give more attention to the mathematics, for I half suspect I do not like them;" and one of the finest Greek scholars in America testifies that at first he had no aptitude for Greek and a strange repugnance to the study. In most cases a judicious and attractive presentation of subjects of knowledge, aided by repetition, will secure a strictly spontaneous attention; and, consequently, remembrance, curiosity, and even wonder, are easily aroused in the young, and quickly assert their power in compelling the mind to solve the mystery presented. The aim of the teacher, as well as the writer and public speaker, ought always to be to present thoughts in such a way as to secure attention with no conscious effort of the will.

5. *The mind naturally proceeds from the specific to the general, and from the concrete to the abstract.* As with the race, so with the individual, progress in knowledge must be by painstaking observation and comparison of phenomena, slowly reducing them to system and evolving their laws. Facts must precede explanations. "The mind," says Herbert Spencer, "like all things that grow, progresses from the homogeneous to the heterogeneous; and a normal training system, being an objective counterpart of this subjective process, must exhibit a like progression. We must proceed from the single to the combined in mastering each branch of knowledge; the mind must be introduced to principles through the medium of examples." We must first apprehend individual objects, and note their resemblances and differences, before we can proceed to analyze or classify them. Thus each science has been evolved from its corresponding art, and the philosophical stage of thought must be preceded by the empirical. And what is thus true of the race and of each individual, in the gradual unfolding of the capacity for generalized thought, is also

true of the mind's progress in the mastery of any new subject. It takes it in detail, grasping first one fact and then another, till it is prepared to reduce its body of knowledge to unity and system. This impulse of the mind to separate a subject into its individual elements in order to study them in detail has not always been recognized, and serious error has resulted. A broad, general principle is sometimes laid down, and examples are then cited under it. In Nature's method the illustration always precedes. Individual objects, phenomena, and experiments come first; afterward, with many a correction and amendment, we reach the broad, comprehensive, and beautiful law which governs them.

6. *The learner should advance from the simple to the complex.* The points most easily apprehended should be presented first, and only a few facts should be given at a time. Let the mind have ample opportunity to thoroughly grasp and assimilate them before more are presented. It thus gains the power to appropriate other and more difficult statements. This law, which seems almost too obvious to require enforcement, has often been misunderstood and misapplied. In one point of view, nothing is so simple as first principles; in another aspect, they are often profound and obscure. Thus groups of facts, or phenomena, are often included under a comprehensive statement which is said to be their law. Every science thus has its laws, or "first principles," which are grand and simple embodiments of numerous and varied facts. To the man who has observed and reflected upon these facts, such principles are simple; but to the child who has not thus advanced in orderly progression, they are utterly unintelligible. Such comprehensive principles are simple only in comparison with the numerous particulars which they comprehend,—not in comparison with each fact taken singly. The learner should always be led to see and understand these general laws through the medium of such facts as illustrate them.

7. *The mind naturally proceeds to the unknown from the known.* It connects new facts or discoveries with those that have already become familiar, and these, in turn, become stepping-stones to a further advance. Approaching a subject for the first time, it instinctively seeks for some point of attack which is not entirely new. It rejoices to extend its advances along a well-known line of march, and to carry its explorations further than ever before, but it recoils from search with nothing to guide its investigations. It argues from analogy. It leaps by an easy inference from the seen to the unseen, from the present to the absent. Hence the connection of new facts with those already understood should be explained. Familiar truths should be

employed as a means of introducing new and analogous ones. Whatever is obscure can be elucidated only by means of what is already known. Every fact, clearly apprehended, gives the mind a certain impulse and power to grasp and assimilate cognate facts; and the more familiar one becomes with any department of study, the greater the relish he will have for additional information concerning it. The methods of original investigation and research adopted in the "seminaries," or clubs for voluntary work, connected with many of the German universities, afford an excellent illustration of this and the two preceding psychological principles. As far as possible let the work be done *con amore.* Encourage the student to seek information from various sources, and to form the habit of examining and searching for himself.

IV. 1. In the light of these psychological principles, and remembering that the mind is self-active, and must be developed by its spontaneous exertion and in accordance with its own nature, we proceed to consider the practical work of the educator. During its first five or six years the child has made acquisitions of knowledge of no insignificant amount. If his early surroundings have been favorable, he has mastered idioms and intricacies of a language abounding in difficulties; he has acquired a considerable vocabulary, learned the names and many of the characteristics of a vast number of familiar objects, and obtained facility in the use of his bodily powers and organs. How has he accomplished so much, and that, too, without painful effort and while his faculties were so feeble? Simply by following the promptings of nature. The restless activity, the fickleness, and the inquisitive instincts of the child have wrought to a grand result. Observant men and women have not failed to note this rapid progress, and have proposed various schemes for extending it into the later years of childhood and youth. Some have even endeavored to transform all the work of the child into play; others, as Pestalozzi and Froebel, have aimed, while teaching the great lessons of self-application, to adapt the work so happily to the age and taste of the learner that it should never become irksome. Pestalozzi believed that the successive steps in the attainment of knowledge could be made so easy that the child would take them without conscious effort. Froebel's "gifts" were constructed with this intention. Both were philanthropists, and their systems, which have often been misunderstood and perverted, were animated by the same spirit, — one of the greatest merits which the teacher can possess, — care for the child. Pestalozzi's motto was, "Love can always find means." To teachers he often said, "Go and learn of the mother." His invention, or, as he called it, his discovery of object-teaching, was purely accidental, and a remarkable illustration of his disposition to make the best of the meager facilities at hand because of his love for the children.

The analogy of education to the gardener's art gave Froebel the name for his infant school. As the business of the gardener is to understand each plant and flower, to know how to bring it to the most perfect development, so the teacher is to watch and foster the growth of each budding faculty in the child. Not the least of the services rendered by Froebel to the cause of education was the introduction of this suggestive name. No teacher of little children can reflect upon the significance of *kindergarten* without becoming more thoughtful and appreciative. Skill in teaching consists less in imparting knowledge than in leading pupils to find out for themselves. Object-lessons are Nature's method of instruction, and furnish the best discipline for the mind of the child. Properly employed, they are admirably adapted to the wants of little children, but injudicious teachers often make them a means of loading the memory with burdensome lists of names and fanciful qualities and relations.

What the *kindergarten* is among German schools the *Salle d'Asyle* is among the French. Objects and pictures are substituted for books; the child is trained to observe the properties of familiar objects, and his imitative and constructive instincts are guided and developed in the production of articles of almost endless variety. Fortunately, these methods of instruction are not confined to any country, nor to the school-room. The little girl who is taught in the nursery or at the fireside the mysteries of paper dolls, birds, and houses, and the little boy who learns in the fields or woods to make a whistle, a jack-o'-lantern, or a trap, are being trained in the *kindergarten* method, and their pleasure and improvement bear constant witness to the excellence of the method. And, in this connection, note the necessity of toys to the child. How warped and one sided has been the manhood and womanhood developed by those people whose parents and teachers have overlooked or denied the importance of play and playthings for little children. In such persons the imagination lies almost dormant, and every event or experience is clothed in sombre hues. The art instinct is developed early in life, if at all. Those nations which have produced many celebrated artists have provided their children with an abundance of toys.

Our space will not permit us to enter upon other and attractive features of primary teaching. We note, by way of recapitulation, that the aim of the teacher should be to gain the confidence and affection of the children; to understand the peculiarities and requirements of each; to gratify their love of activity; to arouse and then satisfy their curiosity; to associate, in their minds, pleasure with instruction; to train them to observe closely; and to lay the foundation for future ambition and will-power by giving them as often as possible the pleasure of success.

As the child acquires the power of prolonged attention, the instruction may be made more systematic and thorough, but it should be given in the same spirit of love and with the same attractiveness as before.

2. The age of ten or twelve is, perhaps, the most favorable, during the whole life, for the education of the senses. The specific duty of training the eye, the ear, and the other organs to do their work easily and well has been somewhat overlooked. Each of these instruments of the mind is capable of great improvement, especially in childhood and youth; but, unfortunately, the evidence all goes to show that the sight, and even the other senses, are often impaired during the period of school-life. Our limits will not permit us to discuss this subject here; but if the sailor becomes able to see a ship at twice the distance at which the landsman can discern it, if the engraver and lace-maker learn to execute the most delicate work with the eye unaided, and if the other senses respond as admirably to the demand made upon them for more perfect work, surely the training of these physical organs should not be wholly neglected. What a pity that such a wonderful piece of mechanism as the eye or the hand should render us only one-half the service of which it is capable!

And closely connected with the perfection of the organs of sense is another particular in which great improvement is possible in most children. Perhaps there is no respect in which persons differ more than in their powers, or, at least, their habits of observation. Two men, for example, walk together in a park, or inspect the same piece of mechanism. One can give a clear and intelligible description of all that was to be seen; the other can recall nothing,—practically, has seen nothing. And yet, in grasp of thought, and in all that is usually called culture, the two men may be equal. Can any one doubt that he who is trained to habits of observation and quick perception has a great advantage? Manifestly, all children can be greatly benefited by such training as will improve their habits of observation. What is begun in the object-lessons of the primary school should be carried out and applied in the higher grades.

3. Before inquiring more particularly what sequence of studies will correspond with the growth of the mind, we must first dispose of a preliminary question. Is it possible to make school-work attractive

to the pupil? When the ***kindergarten*** methods and object-lessons are outgrown, must the pleasure and interest in school-work cease? Many claim that it must. Bain says, "There comes, then, the stern conclusion that the uninteresting must be faced at last. The age of drudgery must commence: every motive that can avert it is in the end exhausted. We begin the discipline of life by inuring the child, gradually, to uninviting, severe, and repugnant occupation."

Too often, alas! have teachers resigned themselves to the same conclusion. We protest against it. Such an admission robs both teacher and pupil of all enthusiasm and gladness in their work. In opposition to this depressing philosophy, we claim that the normal action of each faculty and power, whether of body or mind, was designed to be, and *is*, pleasurable. *Labor ipse voluptas* has been not less the experience than the motto of men of strong and well-rounded character. Properly regulated and directed, mental effort affords enjoyment. Absolute idleness is always irksome. Moreover, the love of knowledge, whether it be the curiosity of the child, or the irrepressible desire of the scientist to probe Nature's secrets, is an original and powerful principle, and may always be relied upon as a sure auxiliary of the teacher. No; the difficulty is not that pupils have no desire to learn, but that they are set to learn something which is not adapted to their range of thought. To this misfortune is often added the error of making school such a place of severity and unnatural restraint that the scholar has unpleasant associations with everything done there. But let school be made attractive; let it be pervaded by a spirit of cheerfulness; let the instruction and the requirements be properly adapted to the capacity of the pupils, and they will not deem the work "drudgery," nor the occupation "repugnant."

Having assured ourselves, then, that school-work need not be irksome and distasteful, we return to the question concerning the order of studies. Our answer, in general, is that those branches which call into exercise the reasoning powers or require abstract thought should be postponed as long as possible; or, if it is necessary that they be taken early in the course, that they should be so changed from abstract to concrete methods of treatment as to adapt them to the capacity of the child. Take, for example, English grammar. As formerly taught it was obscure, and, of course, distasteful to the child; but changed, as it has generally been, to "Language Lessons," it is brought within the reach of very young pupils. The testimony of teachers seems to be unanimous that the change has rendered the study much more interesting and profitable to the children. In most public-school systems children are required to study arithmetic six or eight years. No one will claim that our pupils learn too much arithmetic; but why is it necessary to devote so much time to it? Simply because an effort is made to teach the child a study which he is not yet prepared to learn. Arithmetic calls into exercise a range of faculties which are not much developed in childhood. Between the ages of eight and fourteen the perceptive faculties, the memory, and the imagination act spontaneously and with remarkable vigor and certainty; the reasoning powers, on the other hand, act slowly and feebly, and only under an effort of the will which the child possesses little power to put forth. Many a bright boy or girl will read a story-book for three hours with ease and delight, to whom it is an utter impossibility to give fixed attention to the more intricate work of arithmetic for thirty minutes. Why should we insist upon trying to teach the pupil that which he is not qualified to learn? We may be assured that so long as we do we shall continue to find evidence of the inherent indolence and dullness of the pupils. President Porter says, "To anticipate the development of the reflective powers by forcing upon the intellect studies which imply and require these capacities, is to commit the double error of misusing the time which is especially appropriate for simple acquisition, and of forcing the intellect to efforts which are untimely and unnatural." To attempt to make up for the feebleness of the child's intellectual grasp by concentrating his thought and time upon a distasteful study, is unphilosophical and pernicious.

Probably the prominence which has usually been given to arithmetic and grammar, in the early years of school-life, has been largely due to their importance; but even the great practical value of these subjects is not a sufficient reason for requiring the child to grapple with them prematurely. On the other hand, it can easily be seen that various branches, not at present generally taught, might be profitably introduced into the lower and intermediate grades. Many subjects relating to elementary science and natural history can readily be so simplified as to be interesting and attractive as well as useful to the child. The same is true of history and the modern languages. A child of ten years can learn French or German with one-half the study that will be necessary ten years later in his life. Perhaps these languages cannot be taught in primary and grammar schools as now organized, but there is no difficulty in teaching the elements and practical applications of several of the sciences to classes of very young children. Instead, then, of sneering at children's text-books on familiar science, as is too often done, we ought to encourage the production of such books, and endeavor to introduce them in the early years of the pupil's school-life. Nor should it be overlooked that the eager curiosity of the child, which will so greatly aid his teacher, is powerfully evoked by the elementary facts of natural science.

4. The importance of training the memory to do its work readily and accurately should not be overlooked. The reaction against "cramming" has created a tendency to undervalue this faculty. No power of the mind is more constantly in use, or has a more intimate connection with our happiness and welfare. No faculty will better repay cultivation. It served to raise Niebuhr and Macaulay and Prescott to the highest eminence, and in a less conspicuous but no less certain way has rendered multitudes of other men successful. Porter says, "The methods of education should be conducted with a distinct recognition of the wise management of nature in developing and maturing the memory. In the earlier periods of life it should be stimulated and enriched by appropriate studies. The child should learn stories, poems, facts, as freely as it can be made to respond to such tasks. Large accumulations of familiar knowledge may thus be made with the greatest ease."

In training the memory two objects should be kept in view: *first*, the ability to acquire rapidly. In the affairs of life it is often necessary that one should familiarize himself with a given subject on short notice. Thus an editor, a lawyer, or a man in business may be obliged to depend upon such study and investigation of a subject as can be accomplished in a very brief time. School-training ought to lay the foundation from which shall rise, in maturer years, the ability to obtain quickly a clear and complete knowledge of a subject. Hence scholars should be advised and required to study their lessons with the greatest possible concentration, and *thoroughly* master them in a short time.

A *second* object to be aeccomplished in the education of the memory is the accumulation of a large amount of knowledge. The changes which this faculty undergoes at different periods of life render such acquisitions easy. The child remembers each isolated object or event just as it comes to his notice. The man remembers principles and laws, and forgets disconnected details. During the early years the memory craves facts. So they be made inviting, the amount which it will devour is wonderful. By all means, then, feed it with its appropriate food. Let it acquire, as a permanent possession, the largest possible amount of *useful* knowledge.

5. Max Müller has shown, with great ability, the dependence of

clearness of thought upon clearness of expression. No one can proceed beyond the very alphabet of knowledge without the aid of language; and he who has not acquired clearness and facility in communicating his ideas has a perpetual impediment in his way. Thought takes form in language, and can only be clear and complete as it finds adequate and correct expression. It is not our purpose to enter upon any of the controverted points concerning the relative value of linguistic and scientific study, but simply to indicate the important psychological fact, that language is not only the vehicle of thought, but that it so reacts upon thought as to confuse and suppress ideas when adequate expression is not afforded to them. Hence the necessity of such drill and exercise and correction of errors in speech as will perfect this instrument of the mind, and render it serviceable in the highest degree.

6. In more advanced education the teacher should constantly aim to train the mind to habits of independent investigation and research. The amount of available information imparted in the school must necessarily be small in comparison with the requirements of everyday life. What men need is not so much knowledge as the habit of gaining knowledge; then, as occasion offers, the requisite information will be obtained. School-work should be so conducted as to necessitate research on the part of the scholar. He must learn to depend, not upon the text-book or his teacher, but upon books of reference and experiments and calculations of his own. To accomplish this, work should be assigned by topics, and scholars should be encouraged to gather information from every available source. Instead of answering questions, the teacher should tell where or how the answer may be found. Thus Faraday and Agassiz and Hopkins have instructed and invigorated their pupils by compelling them to instruct themselves.

Other points of interest and importance must be omitted from our discussion. We conclude with the following general observations:

1. The qualities of mind and character which are desired in the scholar must be in the teacher. "Men do not gather grapes of thorns, nor figs of thistles." If a teacher lacks integrity, refinement, earnestness, or courtesy, he cannot inspire his pupils with these virtues. An unconscious influence emanates from him which tends to fix the standards of excellence in their minds. Every teacher should distinctly understand that the prime condition of successfully inculcating any excellence, whether of morals or manners, of habits of thought or habits of speech, is to possess it himself, and uniformly practice it in his school. Especially contagious are such qualities as

cheerfulness, earnestness, and courtesy,—virtues of fundamental importance in themselves, as well as intimately related to intellectual growth.

2. In all grades of teaching distinct, and frequent alternations of subjects should be arranged. The mind requires for its best activity some variety of occupation. It relaxes its grasp if the tension is too long continued. Before the point of conscious fatigue is reached the form of exertion should be changed. Otherwise a feverish anxiety and restlessness will be induced, and the health will be endangered. Moreover, since the aim of the teacher is to produce a symmetrical development of all the faculties, such work should be provided as will call them successively into exercise.

3. Those men and women who have done most to make the name of teacher honorable, have reflected much upon the laws and conditions of mental growth. Whoever would attain the highest excellence in this profession must thoroughly understand the processes through which he would conduct his pupils. Here is an inexhaustible field of study. The teacher who gives little thought to it will find his work becoming superficial and mechanical. Probably to no man since the days of Socrates have these problems been more familiar than to Dr. Arnold. When asked why he continued to give so much thought to them, he replied, "Because I wish my pupils to drink from a running stream and not from a stagnant pool." If the teacher is to be a fountain of knowledge and power to his scholars, verily he must know their wants, collectively and individually. He will adapt his instruction to each; and that he may do this, he will observe closely their traits of character and habits of thought and expression, and will ponder upon the problems which they present. And, while he aims to enkindle in his pupils an enthusiasm for study as they look out upon the ocean of knowledge yet to be acquired, he will remember the motto of ex-President Woolsey, that "before knowledge we should place culture, and before culture we should place character."

RIGHTS OF CHILDREN.[1]

BY MISS EMMA C. BASCOM.

Children are the germ-life of the future. It is through our children that our most effective and permanent work must be accomplished for the continuous enlargement of the kingdom of knowledge and virtue in the world. It is, therefore, a matter of vital importance that the claims of children be well understood and fully met.

Children, in the first instance, have the sacred right to be well-born. We do not mean born into wealth or rank,—which is often to be ill-born,—but born of parents of good health, good habits, and just convictions; and so born into conditions favorable in some good degree to sound physical, mental, and moral development. Entailed evils, if overcome at all, are overcome with the utmost difficulty. The physical and moral deformities of vicious parentage sweep down the ages with ever-increasing power, filling our prisons, reform schools, and asylums, and corrupting the home, the church, and the State. Indeed, there would be no redemption for men under this law of increase were it not that families, nations, and races break down utterly under the entail of crime, and so fall off with the wreck of departing years. In view of the appalling vices entailed by bad parentage, and the tendency of these vices to perpetually renew and increase themselves, it is not too much to hope that the time may come when it will be considered the wisest policy for the interests of the state,—the most beneficent for the welfare of humanity, certainly,—to enforce sentiments, possibly to adopt measures, that will secure in some larger proportion this first and most fundamental claim of every child,—*good birth.* In our public schools one-half of the time now given to merely formal knowledge might, with great gain, be displaced by instruction concerning laws of heredity, and, later, by a faithful and impressive presentation of the responsibilities involved in parentage. When these things are more plainly and more generally understood, we may hope that the relations of marriage and parentage will be assumed more thoughtfully, and in more accordance with the laws of our highest being. Fathers will then less often blast the lives of their offspring by the entail of vicious habits and uncontrollable appetites. The time must surely come when deformed and diseased children will no longer curse humanity, and when our advancement in the truly *fine art* of right living will be measured by the health and purity of our youth.

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[1] Paper read before the Woman's Congress.

By these same laws of inheritance virtues are transmitted, which equally tend to increase and perpetuate themselves. Parents may endow their children with sound physical qualities and high spiritual tendencies. Such inheritance is the richest legacy a child can receive, and, for the lack of it, no future gifts or opportunities can at all atone. The well-born child may safely suffer many wrongs and privations; may, all unharmed, meet many temptations; while against coarse, low habits and degrading vices he is inwardly fortified. Such inheritance is largely independent of wealth and position, and is chiefly derived from character. The lives of parents while rearing their offspring tell with great power, but the habits, aims, and opportunities of their *whole* lives tell with immeasurably more power. These sacred laws of heredity furnish the highest incentives that could be given to human beings, to seek ever the largest, noblest, and purest life possible. By these laws virtues may be enlarged, vices may be eliminated, and righteousness made to prevail in our children and children's children. It is along these very lines of law that God visits either the vices or the virtues of parents on the third and fourth generations. Well are we taught by our Divine Master to make much of the children, for through them the kingdom of Heaven finds entrance.

The questions of the hour wait solution, and our great reforms move slowly on, because the good and wise endowed by noble ancestry are so few. No grander legacy can parents leave the State than well-born children; and in no more effective manner can they obey the injunction, "Prepare ye the way of the Lord." It was partly, at least in this spirit, that the Israelites attached such importance to children born and trained within their national and spiritual life.

Good birth makes good training comparatively easy. The first requisite in parents for good training is a knowledge of the general laws of physical health and of moral and mental growth. Ignorance here is the source of the yearly slaughter of many innocents, of much life long invalidism, and of much mental and moral weakness, for which no after-repentance of parents can make amends. Laws preside over all normal development, and these laws must be known and obeyed, or serious losses must follow.

For the same reason that the child, utterly unable to endow itself or defend itself against the faults of parents, is entitled to be well born is it entitled to wise, physical training. Parents should know how to keep their children in health. When, through carelessness or negligence, illness has been induced, they should know how to restore health, without recourse to doctors or drugs, simply by giving the opportunity for the working of Nature's own curative forces. Plenty of sweet air and sunshine, simple food, and proper clothing are the chief needs of infancy. No ignorant nurses, no foolish fashions, no absurd customs, should be allowed any influence in the provision of these great essentials. Simplicity in every form should wait on childhood. The wisdom of the age, demands especially that the clothing of girls should be suitable for out-door life, and that in its severe plainness it should suppress, so far as possible, that innate vanity which undue attention to dress in past generations has fostered in woman, always to her great detriment and often to her complete ruin.

Said the late wise and good Dr. Brown of Edinburgh, " Children should be always laughing or playing, or eating or sleeping." This is most true of the first four years, after which object-lessons, on the principles of the kindergarten, may be judiciously mingled with their play for the next three or four years.

All honor and gratitude are due Miss Elizabeth Peabody, Dr. W. T. Harris, and their fellow-laborers, for the grand work they have done for child culture. The interest they have awakened in this neglected department has led to the successful establishment of public kindergartens in many of our large cities, where to-day thousands of happy children, by their vigorous, physical life, their alert senses, and well-disciplined muscles, attest the fact that these schools are based on the right principles for the training of child-life ; a training which aims to put the child in happy possession of his physical and mental powers in their conjoint action. We may well wish these public kindergartens to multiply till every child, whose home-nursery is not a kindergarten, shall be found in one of them.

The child who has received by birth and by personal care the primary conditions of physical well-being is farther entitled, according to the varying ability of the parents, to that discipline and instruction which are to unfold and enrich in due order his social and spiritual life. Little government is required during childhood where the example of the parents is correct, and the atmosphere of the home is one of love, patience, and self-denial. But if the prevailing spirit of the household is selfish and worldly, full of care and fretfulness, no amount of formal teaching and external discipline can avail against it. Impatience begets impatience; anger begets anger. The faults and defects of children are usually either the reflection of those of their parents or a reaction against them. Often the surest and easiest way to correct children is for parents to correct themselves. The example of a true life is the most potent of all influences in molding the young.

Parents should cultivate the closest fellowship with their children by their ready sympathies and large participation in their joys and sorrows, in their games and tasks. The passing years will deepen this fellowship till authority gives way to counsel, and obedience is lost in reverent love.

Too much constraint and control are as hurtful as too little. Children need to be left much to their own resources. Experience is often their best teacher. What is learned by their own mental effort is best learned. Oftentimes the most salutary discipline is that which leaves them to suffer the natural consequences of their own conduct. Self-control and self-reliance should be prominent aims in discipline. The approbation or disapprobation of loving parents may be made most effective means of reward and punishment. Corporal punishment reflects discredit on the one who finds occasion to make use of it.

The training of the household should closely unite itself to that of the community. It is in passing to the larger range of life which society offers that the child encounters his first great dangers, and especially calls for the aid of parents. The public school is a peculiarly fit and helpful means at this point. By the support, supervision, and intelligent interest of worthy parents our public schools should be placed far beyond the competition of private schools in all appliances for physical, mental, and moral development. The larger and more promiscuous attendance give better conditions for self restraint and mutual forbearance; for sufficient but not over-much individual surveilance; for power of abstraction in the study-room, and for breadth of mental outlook in the recitation. The public school, by virtue of these larger interests and more varied circum stances, must ever be superior to the private school in its preparation for the work and duties of life.

High moral character is imperative in a teacher of youth, and all knowledge should be subordinate to it. Lofty ideals of manhood and womanhood, love of right, purity of habits, integrity and industry, these should be inspired and made impressive and attractive by the teacher's own life. The wise, conscientious teacher,—and there should be no other,—will carefully and widely discriminate between love of fun and noise, violation of petty rules and those moral offences such as lying, cheating, idleness, and lack of honor, and will measure his reprobation accordingly.

The teacher must have a broad, mental outlook, and must keep abreast of the age in its advanced ideas, its advanced knowledge in physical science, in social science, and even in theology. No teacher is worthy his high calling who would be content to use the text-books of thirty years ago. Our youth should have the best thought of the hour; and, in their intellectual growth, should not be burdened, dwarfed, or hindered by useless details, obsolete facts, and exploded theories.

Children should be especially protected from undue excitement, from nervous fatigue and overwork. The utmost care is demanded to save them from the intensity and ferment of this age of feverish unrest and excessive mental activity. Our schools should be quiet retreats, affording the best conditions for the normal unfolding of the powers; where love of knowledge is awakened, high aims inspired, and sober purposes formed; and where temperance, forbearance, self-restraint, and industry are earnestly inculcated. If we would have our children grow up into great thinkers and strong workers, it is of preëminent importance that we secure for them regular, healthy, and proportionate discipline. It is for this reason we look upon external stimulus as hurtful, and would suppress, rather than stimulate, any rivalry or emulation that did not arise from the incentives of the mind itself; and would, therefore, banish prizes from every school and college in the land. We fail to understand why many of our higher seats of learning foster this pernicious emulation, this love of notoriety, by material prizes bestowed in public. Much less do we understand why they look with favor on those physical contests whose very nature is excess, and which so readily lead to farther excess that "out of training" is coming to signify a free indulgence in animal appetites. It is this very supremacy of the lower appetites that is fast making shipwreck of all integrity and purity in political life. Truly, we need to go back to the Delphic oracle, "Nothing in excess."

There is also, we feel, too much cramming of rules and abstract definitions in our public schools, and too little teaching of broad and suggestive principles; too much grammar and arithmetic, and too little training of the faculties on the world about them; too much mental pressure, and too little physical culture and happy out-door life. While young boys still hang around street-corners, lounge in saloons, and smoke everywhere, we fear that our public schools have not yet either the attractions or the energy of restraint that belong to them.

If the public schools are to do for the Nation their truly great work, we must devote to them our best thought and sustain them with an unwavering hand. Just here we would call upon all good citizens to denounce, by word and deed, that ruinous public economy that begins its retrenchments by reducing the low wages of teachers, while the public treasury still pays the most exorbitant bills of our legislators for gluttony and drunkenness.

The last thing we have occasion to mention as belonging to the rights of the child is moral and religious training. This is not so much something beyond the things already noticed, and so different from them, as it is their true spirit and form. The household is the first field of the moral law. Here the child encounters it, and here he must learn both to obey it and rejoice in it. The highest inspiration of the home, as it is the highest inspiration of life, is the sense of the divine presence and love. We shall never bring our own thoughts nor the thoughts of our children to their true elevation, except as we abide in this presence and lead them to it.

Parents and children enter together into the labors, the sufferings, the enjoyments, and the hopes of life. Life has for them one law and one solution, and this law is the moral law, and this solution religion. The best powers, the highest wisdom, the profoundest faith of parents will be called into requisition. Their own education must needs advance while fulfilling their responsibilities to their children, guiding them into beneficent purposes and labors for the world. Time, thought, sympathy, and companionship must father and mother give to their offspring, or suffer irreparable loss, both for them and for themselves. No duties will bring richer reward. Wisdom and patience are as potent certainly in the rearing of children as in the rearing of domestic animals; and "of how much more value is a man than a sheep!"

It is in part because of this strict community of spiritual life in the household, its reciprocal ministrations and collective strength, that we would insist so firmly on the true position of the wife and mother. She must claim it for the sake of her children as well as for her own sake. The ideal mother can be no mere household drudge, ministering to the physical wants only of her family, and sacrificing herself on the altar of wifehood and motherhood, to be weaker and less regarded for this very self-abnegation. As the father cannot wisely devote his *entire* time and energies to his business or profession, but needs the companionship and duties of the home to sweeten and make symmetrical his character, so the mother requires outside interests and activities to broaden her knowledge, deepen her sympathies, and enlarge her mental vision. Not otherwise can she fully meet the demands of the ideal home with its claims on all spiritual wealth. She must seek and obtain influence and authority in school, church and state, that her counsel may command the respect of her children, and her love win their love. The richest ministrations of affection need the support of intelligence for their full influence. Affection may aid, but it cannot displace, the word of wisdom. The welfare of the home, and her own individual growth, alike call for this enlarged social and political power for the mother, or her weakness will in some direction betray the interests committed to her. If it be thought that herein we are laying new burdens on physical powers already too weak for those which are being borne, we answer that the many trivial, health-destroying things, the useless, wearisome tasks, which fashion and society now assign to unoccupied powers, are to be escaped; and that the strength for full and varied service will spring up with the service itself. As in the history of the world women have not shown themselves unable to bear even the most degrading, unrequiting, and irksome toil, so certainly they will not fail of the power required for noble labor.

While the law of the household is constant concession; while the special rights of adult sons and daughters may, for the time being, be lost sight of in the common work, it is none the less true that the concession is made for the sake of each one who is partaker in it. The greatest good of all is reached by mutual help, mutual sympathy, and mutual sacrifices, and yet with the full freedom of each and opportunity for each. Together, parents and children build up the ideal home, full of love and kindness, full of wisdom and discipline, the center of all divine beneficence, the perpetual revelation of divine love. This common integrity is conditioned on the fullness of each life within itself, on the fairness with which it unfolds toward every other life, and on the scope, largeness, and community of sentiment that call it out. The law of the household must be a perfect moral law, and its inspiration a divine inspiration.

When manly purity and womanly strength thus pervade the home, not only collectively but individually as well, in all the varied combination of symmetrical character, it becomes the porch of *that* temple, the primordial institution of *that* kingdom, which are built of God and unto God in the world.

INDUSTRIAL EDUCATION, AND INDUSTRIAL DRAWING AS ONE OF ITS ELEMENTS.

BY S. EDWARD WARREN, C. E.

As the term Industrial Education has been criticised, we will begin by saying, to avoid misunderstanding, that by this term we mean just such preparation *for* industrial pursuits as schools usually give for "business or college," and not an actual teaching of trades.

There is experience to show that the introduction of a new subject of study, and still more the creation of a new department of education, is a difficult task. It is not unnatural that it should be so. Thousands and tens of thousands of teachers have learned a certain group or line of subjects. Though it would be most unjust to imply that they do not continue to learn in after-life, yet it may generally be true that their additional mental growth and acquisitions are mostly, if not wholly, in the line of their previous studies in the years of their own school-life. So far as this is untrue, it is so in the case of those who are correctly described as marked by versatility of character and talents; that is, by the disposition and the ability to turn their hand to anything, or at least to more than one thing. These versatile people are the hope of the world, so far as new things of any kind are to be brought into use through the agency of the generation which for the time has possession of the stage. Beyond them this hope is in the generations following. We say generations, for if there were none having the versatility just mentioned, any existing order of things would be almost indefinitely perpetuated. But the few now on the stage who take kindly to new ideas, studies, and enterprises, in the world of learning, can and will train up a certain number of pupils in their new-found paths. These, in turn, will train others in the second generation; and so the new subjects or methods will finally be made as early and generally accessible as any others ever were, and will be brought within easy reach of all who want them. This natural process of dissemination is like the expanding circles formed by throwing a stone into a pond; or, more exactly, like some of those rapid multiplications in the lower members of the animal creation in which one becomes the center of a circle of successors, each one of which detaches himself after a while from its parent, and in turn becomes a new center in a like manner.

The only alternative to this seems to be to create what we will venture to call a conservative furore; the conservatism acting as a great storage reservoir of experience and reflection to prevent the strong current of popular thought from swelling into a damaging torrent, — literally, to prevent the furore from degenerating into a "craze." But we prefer to this the natural method of expansion already mentioned, and suggested by the operations alluded to in the kingdom of nature.

Absence of versatility, and consequent liability to make and follow ruts,—though no one knows, until he rouses himself by a vigorous effort, how much of very useful versatility he possesses, — is not, however, the only hindrance to the clearing, breaking up, and cultivation of new and hitherto neglected, though fertile, educational fields. There is probably something of the craft-jealousy which made Demetrius and his crowd cry out for the space of two hours, "Great is Diana of the Ephesians"; the hidden stimulus to their "too thin" because too vociferous devotion, being the unwelcome suspicion that "our craft is in danger." In former times of benumbing ignorance, when multitudes could not see beyond the passing day, and had not the power to reflect, any improvement was superstitiously dreaded as sure to bring ruin in its train. But experience has taught us that every improvement is a new ally to the existing forces of good, and that it makes the demand which it is to supply. It does this, moreover, not by robbing other supplies of the demands which they exist to meet, but by appealing to a new constituency hitherto unsupplied. The most extensive possible American production of tea, raisins, and silk would not diminish, but increase, the cultivation of wheat and corn. So a large increase of industrial education of all grades would, in all human probability, never dislodge any living teachers of language, literature, history, and philosophy, nor diminish the future demand for them; but rather would increase it in a certain way, since all these subjects should be included in a certain degree and manner in all education whatsoever.

The Mississippi River is necessarily different, below its junction with the Missouri, from what it was above, by reason of the character of the latter, without laborious and anxious efforts by man to create such a difference by transporting and dumping quantities of the Missouri's banks into the Mississippi. So the current of life, since the existence of Greece and Rome, has inevitably been varied by new constituents, not before possessed, yet without anxious labor by man to make it so. Classical learning will always have its natural and willing devotees, through whom it will surely and sufficiently perpetuate itself. But surely it is most needlessly and abjectly uncomplimentary to any other age or nation to say that it is constitutionally incapable of a total life, body of thought, and language as a vehicle of thought, *equivalent* to those of Greece and Rome, though not identical with them; and that no finished thinking can be done, or even the capacity for such thinking be acquired, otherwise than through familiarity with Greek and Latin forms of speech.

This much may be enough, by way of amplification of the major premise, that the introduction of a comparatively new and unfamiliar branch or department into courses of study, of whatever grade, is a difficult task. Industrial education, in all its elements and grades, whether as to its principles or practice, is such a comparatively new and unfamiliar branch. Therefore its introduction into courses of study is, etc. So says logic in minor premise and conclusion, and we answer, Good for logic, so far as it goes. But life is more than logic, as much more as a warm and vigorous living body is more than its dried and wired skeleton hung in a closet. Hence, as living beings, we wish to know something of what industrial education is, in its roots and branches, ideas and manipulations, scope and use. We shall thus be better able to judge of its worthiness of admission among the subjects of study which are to be generally or widely pursued. A favorable judgment on this question will then act as a stimulus to overcome the difficulties in the way of such admission.

But there is a preliminary question as to time; for, if no time can be found for a new department of work, it is no matter either what it is, or how good it is. First in order, then, is the question, How is time to be found for industrial education, especially in view of the frequent complaints about the over-crowding of school-courses with too much work, and the confusing of them with too many studies? For, if time cannot be found, and advantageously found, it would, as just said, be useless to dwell on the beauties or utilities of the subject as an admirable mental discipline in neatness, order, and precision, in thinking in *things* as others think in *words;* and so in inventive combination. Now, first, in general, and for the larger future, any observer of life must have noticed the tendency of fashions in everything to move in cycles, and so to return, after awhile, to some former customs. Thus we have had Grecian domestic architecture marked by two-story hollow columns of inch-board, as the far-off Yankee successors of the snowy marble solids of the Parthenon. Then we had equally frivolous gothic. Better was the Italian, with its broad openings and flat, overhanging roofs. Then followed the roomy French roof; and just now the "Queen Anne" style is generally popular. But at some time there will be a revived and modified Grecian, or Gothic, or some other former style. So, again, in education, where forty-two weeks study and August commencements were once the rule, thirty-six weeks study (in an extreme case only thirty-four) and June commencements are now usual. Also the "three R's" that once formed, with something of geography, the staple of common education, are now reinforced or smothered, as we happen to feel about it, by all the 'ologies,—backed, perhaps, by all the 'isms.

We are of those who believe that in both of these particulars,—as well as in the far more important one of the education of the moral nature, under a higher sanction than that of expediency, or merely shifting human custom and opinion,—there will some day be a reaction. We believe it will be found that regular and moderate work, nearly or quite the year round, with daily hours, weekly days, and numerous other short intervals for rest, will be found more beneficial to mind and body than long stretches of uninterrupted activity, aggravated by occasional spurts, alternating with wastefully long periods of entire inanition. The sudden rise and rapid increase, both in number and variety of "summer schools,"—even including one in *Hebrew*,—is already a strong testimony to the natural thirst of healthy minds for a continuous combination of labor, recreation, and rest. By this plan much time could be gained.

With respect to the other point, the multiplication of studies, we think it will be one day realized that, as Hugh Miller and other equally celebrated and successful self-instructors have said, reading is the pass-key to all other knowledge; is in very deed a putting into the hands of the earnest and reasonably capable seeker the key to the door of every treasure-chamber of the vast temple of knowledge. We believe, therefore, that the time will come when schools will be graded far more largely according to subjects, and classed far more largely according to the chosen pursuits of the pupils, than according to the non-essential matter of the age of the pupil; and that far fewer subjects will be taught in any one grade or class of schools than are so taught at present. We believe that there will come to be a foundation grade of schools, in which no more than reading, writing, spelling, and arithmetic will be taught to all comers, regardless of age; and so that by more or less variation of rooms, of hours, and of books, persons of any age, whom misfortune has left uneducated in books, can come and receive the *kind* of instruction they need, in the *way* they need, without exposure to the mortification of being put on the same level with little children, in books, discipline, and methods; and we believe that in such schools, histories, biographies, and travels will be the reading-books for the grown-up pupils, with maps and globes, and occasional oral lessons, by which to learn geography and grammar incidentally through the reading-lessons. Such schools would, except as replenished by ignorant immigrants, soon cause illiteracy to become as nearly extinct as in Norway and Sweden, where, according to various authorities, it is nearly unknown. One states that, in round numbers, 975,000 out of 1,000,000 children of school age were under compulsory instruction.

With the entire Nation thus initiated in learning, and adult illiteracy practically extinct, subsequent schools would well be classed according to the six generally recognized grand divisions of human activity,—agriculture, commerce, and manufactures, or the *industrial* or material group; and literature, science, and art, or the scholarly or intellectual group. The existing state of things indicates a struggle to realize this classification by providing public or private special schools to supplement the deficiencies of the general school system. Thus we have agricultural colleges, commercial colleges, schools of industrial drawing and design, and evening schools suited to business or to artisan life; also, we have colleges of music,—sometimes, also, including the elements of a general education.

A powerful impulse toward a fuller realization would come from a broadening of our ideas of language and of a school. It will have to be recognized that man can think in things as well as in words, and that some can think better in things than in words. It will be more generally seen that a complete Bessemer steel establishment, a modern steam printing-press, or steamship, are as truly intellectual compositions, written with fire and hammer in words of brass and iron, as the Iliad, or Scott's novels are compositions written with ink in words of letters; that there are diversities of gifts, but that all have not the same gifts; and finally, that the substantial equality of the gifts, in many cases, is shown by the equal impossibility of either of two possessors of different gifts doing what the other can do. Watt could no more be Milton than Milton could be Watt, and neither of them could be Washington any more than Washington could be either of them.

It will also have to be recognized that any place in which mind and hand are called into joint activity, under competent guidance, in learning what to do and how to do it, is truly and properly a school, and that if to the *what* and the *how* a knowledge of the *why* is added, it is truly a school for the mind. Thus the farm, supplemented by a good agricultural newspaper, agricultural books, and an active farmers' club or lyceum, for the intellectual part of the business, is the original, natural, and most real school for the farmer,—enough to make him successful in his calling, proud of it as essential to the existence of all others whatever, and joyful in it as the healthiest for body, mind, and manly character. Similar remarks, to a greater or less extent, may be made of the ship, as the school for the sailor; the store, as the school for the merchant; and the work-shop, as the school for the artisan. Looking on all these as the true counterparts for the parties concerned,—of the laboratory for the chemist, the observatory for the astronomer, the studio for the artist, and the dissecting-room for the physician,—and as truly and really schools, and scouting the senseless, indeed the "dude," notion that the respectability of an occupation depends on the style of dress and state of the hands which it permits or requires when on duty in it,—as if character were put on and off with the garments,—false notions of the relative honorableness of different pursuits will give place to sensible ones. Then it will no longer be felt that, to make any calling honorable, it must necessarily be backed by an institutional or book school. Why, for example, is it in any respect better to learn how to drive a nail or saw a board in a school-building than in a carpenter's shop, the same man being the teacher in both cases? And the like may be asked of the demands of any practical calling.

When such rational ideas as we believe these to be come to prevail, then the idea of half-time schools will follow. All the varied haunts of industry will be seen to be only so many laboratories or practice schools, supplementary to the book or institutional schools. The reaction of each upon the other would be most admirable. In the laboratory, as we call the shop, farm, or store, the pupil would find out what it was that he most needed to learn, and at the school, or at the public library,—especially if one or more consulting educators could always be found there,—could learn it; while in the school, experience would show how to adapt the instruction to the wants of the pupil, and would increase his intelligent interest in his practical work.

Lest the views now given should seem visionary, it may be added that they have long been realized in several important features in foreign experience. In showing this to be true, we shall not go over the most familiar ground of French, German, Austrian, and other statistics of elementary and higher industrial and technical education in the great European nations,—for which see the reports of the United States Commissioner of Education, or other authorities,—but we shall introduce some recent ones from the smaller, poorer, colder, and less familiar far northern countries, Norway and Sweden. These statistics are especially interesting as being, not unnaturally, a probable surprise to most inquirers. All over Sweden, the most prominent building in most of the towns and villages, even in the far north, is the school-house, which is sometimes really elegant, and is generally provided with a gymnasium, providing for physical culture, and a library, which provides for the voluntary element in education,—in other words, for a measure of self-education. Teachers are honored, not only on abstract grounds as belonging to a noble profession, but on the more practical one of being themselves highly educated; they being generally university graduates, except in the most rural districts, where the movable ("ambulatory") schools are conducted by intelligent farmers. This honor is also manifested socially, and by pensions after thirty years of service. The course of study in the common or "people's" schools is wisely flexible, the school-boards having discretion to extend it, according to the wants of different communities, so as to include natural science, drawing, and surveying for the boys, needle-work for the girls, and horticulture and gardening in the farming regions. Here is just that equitable recognition of all callings which, as we have urged above, should prevail everywhere. It should do so as a check to an inordinate and unhealthy stampede to the city, and to its over-crowded pursuits, and in order that a much-to-be-desired enthusiasm and ambition for agriculture and the useful arts might be developed.

Besides the universal and reasonably varied people's schools, there are in Sweden fourteen people's high schools, suitably distributed among a population of about four and a half millions (equivalent, therefore, to one hundred and seventy such for the United States) for the instruction of young working-men and women beyond the school-age, in general knowledge and in practical science suited to their daily industries. There are also ten schools for such children of the industrial classes as show special desire and aptitude for more knowledge than the general common schools afford. Further, there are many public and private professional and trade schools, twenty-seven agricultural schools, and two agricultural colleges. In the former, the trade schools, various trades are taught; in some there is a course of three years of mingled study and practice, of which the Worcester (Mass.) Free Institute of Industrial Science may be taken as an American example. At Bergen, in Norway, is a free industrial school of over five hundred girls, from seven to sixteen years of age, in which all manner of sewing and knitting work is taught, combined with the elements of useful knowledge. In Stockholm is a free industrial school of over twenty-five hundred pupils of both sexes, and where there is instruction in a large number of useful studies and practical pursuits. The course in the agricultural schools lasts two years. Some of them include dairy schools for women, where they spend a year in learning everything about butter and cheese making. Over all, as respects industrial education,—there being, besides, three universities for which preparation is made, as here, in public or private high schools,—are two polytechnic institutes, both now *more than seventy years old*, and two private mining schools. The two former contain over four hundred students.[1]

If, now, the stereotyped phrase in school-advertisements, "preparation for business or college," —and which applies equally to public and private schools, —expresses the one-sidedness of American education; and if this phrase, needs to be supplemented by the words for agriculture, the arts, and scientific schools, there must be some underlying natural fact to justify the charge of one-sidedness, and the demand for the supplementary addition, which is called for here, and was long ago put in operation elsewhere, as just shown. We believe that there is such a fact, and that it may be expressed as a fruitful principle by saying again that some men think in *words*, and some men think in *things*. Webster, in his noble Bunker Hill Monument oration, was a splendid example of a man thinking in *words*, and also of the fact that a toilsome New Hampshire farm-life was no necessary hindrance to his being such. Ericsson, planning the Monitor, turning off sheets of elegant drawings (the written language of mechanical composition), is a corresponding example of brilliant thinking in *things*. Probably there are few who do not know of some among their acquaintance who may have been more or less conspicuous failures in school or college, and who, nevertheless, have shown large capacities for practical affairs, agricultural, commercial, or mechanical,—managing, it may be, extensive works for a long time and with high success. This being so, natural justice and equity toward minds of equal capacity, but widely different constitution, demands that each should have the kind of education on which alone it is possible for it to thrive.

But how shall this equality be brought about? In either of two ways, either of which will secure a cardinal point on which all freemen are sensitive, that of all being served alike. First, taking the ground that letters are the foundation of all thought-life, and figures and forms of all practical life, popular education, for all who do not choose to pay for more, may end with language, arithmetic, and geometry. Real life, in all its departments, will then be the universal school, in some one department of which every one will find himself. He will then gain whatever further education he wants, whether general or special, from libraries, general or class periodicals, masters in whatever business he is in, or associations of persons in the same pursuits. This is essentially the method by which, in former days, every great pastor's study, every great physician's, or lawyer's, or architect's, or engineer's office, or artist's studio, was a school for candidates for these callings: just as the shop, the ship, or the farm was the mechanic's, the sailor's, or the farmer's school. Whatever else may be said of this plan, this is doubtless true of it, that it favored that precious thing, individuality, and did not tend to make all education the work of an educational mill, turning out men as much alike as two yards of white cotton from the same piece.

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[1] See the *Land of the Midnight Sun;* Du Chaillu; ii., 378, etc. Also, Report of Mass. Board of Education, 1881-1; p. 163, etc.

The other method is to teach the elementary principles and operations of all pursuits, intellectual, commercial, mechanical, and agricultural, in the appropriate schools, suited to the wants of local communities. So long as the popular feeling, whether vague or intelligent, is that it is a privilege, a dignity, and an advantage to go to school, and the more so the longer the attendance and the higher the school, so long popular respect for different pursuits will be very apt to be measured by the comparative amounts of school-preparation which they respectively receive. If, then, the result is to be reached exceedingly important to a republic, of holding in equal respect all occupations which imply equal intelligence, and are equally promotive of public and private prosperity and virtue, one of two things must be done. If institutional or book schools, alone, are to be regarded with honor as really deserving the name of schools, then all pursuits must, in some way, be represented in schools,—that is, must find something in the lessons and the teaching which is directly adapted to their wants as preparatory to them. Otherwise, the idea and definition of school must be broadened, as already indicated, until the places in which all the various industries are learned by experience are regarded as just so many industrial schools, radiating from the elementary school of letters, figures, and forms, which gives only what all need, and all need alike.

We insist again on forms, since it greatly needs to be everywhere realized that *geometry* is the foundation of all *mechanical* pursuits, as truly as *arithmetic* is of *business* pursuits; and hence that,—as has not yet been the case,—it should everywhere be begun as early, and in as elementary a manner, as arithmetic is.

When a whole nation,—nay, the whole world,—is resolved to make an experiment, as of industrial training in institutional schools, it would probably be useless to do more than is here done,—viz., to point out such principles as might guide the experiment, and such alternative as may be resorted to, should the results of the experiment be disappointing.

We, therefore, here leave the general subject of industrial education to consider for a little while industrial drawing as one of its principal elements, it being auxiliary to so many and important different pursuits.

What, then, is industrial drawing? Its name is its almost complete definition, or, at least, carries its definition in it. It is all such drawing as directly helps on all those useful industries which deal in a definite way with *forms*. Industrial drawing has, therefore, no direct relation to crop or stock raising, and would afford no obvious assistance in plowing, planting, or reaping. Yet, if the farmer were to plan and help to build some of his farm-buildings and furniture, or invent or improve farm-tools and machinery, industrial drawing would be useful to him and his boys. So, also, it would be to his wife and daughters in their efforts to make original and natural decorations to the otherwise bare surfaces of their rooms and furniture. If industrial drawing, thus generally defined, is of easily possible use to the agricultural section of the population, to whom at first thought it might seem to be useless, it may readily be granted that it will be more or less extensively useful to most others. [We here purposely employ the word "section" instead of *class*, since the latter word has become so far infected with the repulsive spirit of caste, in being made to express false ideas of rank, that to many it may be offensive.]

But what, a little more particularly, is industrial drawing? As implied in the reference to the farmer and his boys, and to his wife and daughters, its total scope divides itself naturally into two main divisions; viz., *mechanical* industrial drawing, and *ornamental* or decorative industrial drawing. Strongly pronounced examples of the distinction between these divisions may be found in the drawings of the frame of a building, or of the plain masonry of a system of waterworks or fortifications, or of a plain working-machine, and the drawings of a proposed piece of wood-carving, or a carpet or lace pattern.

With reference to the method of execution, mechanical drawing, as its name implies, is executed by means of certain exact operations with mathematical drawing instruments, and hence is very properly termed instrumental drawing. Indeed, the term mechanical drawing is itself ambiguous, since it may refer to the mechanical *means* by which the drawings are made, or to the mechanical *objects* which it aims to represent. Again, as the principles and methods of instrumental or mechanical drawing rest on a foundation of geometry, it is sometimes and very properly called geometrical drawing. Decorative or ornamental industrial drawing is executed wholly or mainly by the unassisted eye and hand, and from this point of view is often called free-hand drawing.

Industrial free-hand drawing is to be distinguished from purely artistic free-hand drawing, in that in everything to which it is applied the idea of practical utility enters as essential and primary, while that of beauty is subordinate. Thus the primary use of a gold goblet, however richly jeweled, or elaborately fashioned and decorated, is to drink out of; the primary use of a bedstead, though ten feet square, made of all precious woods, richly carved, satin dressed and velvet-canopied, too, is simply to rest or sleep on; and the primary use of a chair is to sit upon, however costly and elegant it may be. Purely artistic drawing, on the contrary, is intended only to afford pleasure by gratifying the sense of beauty.

Once more, as to grade: instruction in industrial draw ingmay conveniently be divided into elementary and higher,—the former suited to secondary education, or that of preparatory schools, and to the usual pursuits of those whose education does not extend beyond that grade; and the latter suited to professional schools, and to special class-schools for skilled workmen.

Mechanical industrial drawing has for its object such exact representation on paper of the intended form and construction of any proposed structure of definitely prescribed form and dimensions, that the object can be constructed from the drawing as a guide, though nothing like it was ever before seen. This kind of drawing is of immediate, obvious, and great utility to all whose daily business it is to give definitely prescribed form to any of the three great materials which enter into exact construction; viz., wood, metal, and stone. Of this drawing alone we shall further speak, leaving to others, who are more familiar with it, the equally important division of decorative industrial drawing, otherwise called ornamental design.

We will next proceed, therefore, to explain the composition of an efficient course of mechanical drawing. First, there comes into operation that familiar principle of imperceptible shading off from one division of things to another, which, for example, makes it so difficult to determine whether sponges and other very low forms of life are animal or vegetable. Thus the mechanical draftsman must not be dependent on the penman or designer for the lettering and border of his drawing. Or, in making a tour of observation, he must not be unable to make rapid sketches, either in plan and elevation, or pictorially, on which to record such principal measures as he would wish to note. Also, in making fine drawings, as of small toothed wheels, it is very desirable to be able to bisect or trisect a small distance by the eye, since that would be a quicker and more convenient method than by a scale and dividers. And yet, again, if an unconscious jogging of dividers or a ruler should slightly alter a distance or the truth of an intended right angle, it would be very desirable that the eye should be able to detect the error. For these and other reasons there should always be attached to a proper system of mechanical industrial drawing *a body of specially related exercises in the free-hand drawing* of regular forms, angles, directions, spacings, lettering, etc.

Again: mechanical drawing is two fold in its subject-matter,—embracing, first, geometrical principles and their application to practice; and, second, a practical knowledge of drawing instruments and materials and their use. In a word, the subject has an intellectual side and a manual side; and, in order that one who knows how to make a drawing, so far as to know where and how to locate all its points and lines, should not spoil it in execution, he should first become practically acquainted with the materials used for the purpose. On the common-sense principle of "one thing at a time," *a separate body of exercises in drafting manipulations* should precede those of complete practice. Experience abundantly shows that it is very easy, at the stage of study to which such exercises belong, to avoid any appearance of aimlessness in them, and to make them highly interesting in themselves, while they evidently facilitate aad improve subsequent higher exercises. This is done partly by putting them in an attractive form, uniform and convenient for preservation, as in plates about eight by twelve inches in size, or smaller, to save loss of time and labor through spoiled work. Also, elementary use of the mathematical instruments may be agreeably combined with the necessary pen and brush operations. Thus, in learning to spread an even pale tint of india-ink or color, it may well be squares, triangles, polygons, circles, rings, etc., that are tinted, instead of indefinite patches of paper. Then, after facility has been acquired in the more elementary exercises, there is a very agreeable body of practical exercises involving but two dimensions, as geometrical tile pavements, doors, windows, or brick-work, which conveniently and appropriately comes in along with a selection of the most generally useful geometrical problems to give body and character to the series of lessons, and to make them both attractive and highly useful in their effect on subsequent higher work.

After the two preliminary sections just noticed, there properly comes the essential substance, the soul, if one may say so, of mechanical drawing; viz., a knowledge of projections. Representations of actual or proposed solid bodies on flat paper are made in two entirely different ways, for two equally unlike purposes. They may be represented in their *apparent* proportions, or as they do or will appear when seen from a given standpoint; or they may be represented in their *real* proportions, or as they really are, excepting, of course, their actual size. Being drawn to scale, however, they do show all parts in the same proportion, and hence, knowing the scale, the actual size can readily be ascertained. The former representations are *perspectives*, and are made for *pictorial effect*. The latter are *projections*, and, in their practical applications, are what are known as working-drawings, or those by which, ships, engines, buildings, bridges, machines, tools, furniture, mechanical inventions, and, in short, every kind of architectural, mechanical, and engineering construction, appliance, or device, are represented as they are, or are to be, and from which they can be constructed, as intended by the designer or inventor. Every one, therefore, of the hundreds of thousands of persons who are engaged in the designing or making of any of these many things, in all their variety, has a direct and immediate interest in possessing a practical knowledge of mechanical drawing; while to all that large portion of the general public which at any time is employing persons engaged in these industries, some knowledge of this subject would in many ways be a great convenience. What was doing or to be done would be more clearly realized, and misunderstandings, disappointments, and contentions would be avoided.

The higher principles and practice of mechanical drawing belong to the higher technical schools, which are generally well appreciated, and where the subject in its higher relations is known to be increasingly well cared for under the name of descriptive geometry and its applications, the latter sometimes collectively known as stereotomy. The great popular movement now going on, — though yet in its infancy,—in behalf of industrial education, more immediately concerns secondary education, or that given in academies, high schools, and special manual-training schools. Our remarks are, therefore, mainly devoted to that grade of mechanical drawing which, as an essential element in a general elementary industrial education, belongs with its allied subjects in the elementary schools.

By analyzing geometrically any number of architectural, mechanical, and engineering structures, we shall find that, with comparatively few exceptions, their component forms reduce to the five which are characteristic of elementary geometry. These are the prism, pyramid, cylinder, cone, and sphere. Thus a brick is a prism, and most masonry is prismatic or pyramidal. An immense number of the separate parts of machines are cylindrical or conical Many of them are spherical, and so are domes, while the sloping roofs of round towers are conical. The most numerous and important exceptions just alluded to are the screw forms, found in machinery screws, circular stairs, and screw propellers,—the annular or ring forms having a circular cross-section, as in a ring of lead pipe, and bell forms.

All this being so, systematic progress from the foundation would naturally begin with making the learner thoroughly familiar with the plans, elevations, and sections of all positions of these five elementary solids which enter so largely into the composition of all material structures of a geometrical character. But these bodies are often found in combination, as when a pyramidal portion of roof, as of a tower, rises out of a cylindrical one (as a French roof), or when a cylindrical pipe has cylindrical or conical branches, or a cylindrical (arched) gallery opens into a dome (sphere). We see, therefore, that besides the representation of the separate solids, there is frequent occasion to find the lines in which they join, cut, or intersect each other, when combined in various ways. *How* to do it, it is the object of easily accessible works to tell. Our present object is only to call general attention to the fact that it needs to be done; that many have occasion to know how to do it, and chiefly that they should be able to do it by some more rational, direct, purpose-like, and less wasteful way than the "cut and try" method. But to reach this result there must be thorough and systematic teaching, not covering a wide range of forms or geometrical principles, yet thorough in principles and practice as far as it goes, and embracing all the usual forms.

From this foundation of elementary mechanical drawing the learner can proceed to work of a more practical character, in the drawing to scale of carpentry, masonry, and machinery details and simple structures. In immediate connection with this stage of his work the easy special forms of detail drawing, called isometrical drawing and oblique projection, may be soon acquired. These are especially suited to the representation of all manner of small square-cornered work, like boxes, framing-joints, etc.

If there be an exception, in which the initial drill in the projection of the simple geometrical solids might be omitted, it would be in the case of skilled mechanical artisans. Their superior familiarity with the objects which they are constantly handling, and looking at in every possible way, might make it practicable for them to at once attack the problem of drawing those objects, and to refer to the equivalent elementary solids only as emergencies might arise, or to make some principle of general application clearer. But for all those who are not yet artisans, but intend to be, it would seem to be the best, if not the only proper place to begin, as suggested, at the natural beginning, the projection of the elementary solids, singly and in various combinations.

The difference between the two cases just described indicates the utility of special evening or shop schools for artisans, in other subjects as well as in the one under consideration. Their age, previous experience, and consequent mental characteristics and resulting wants, are all quite different from those of ordinary school-pupils, and hence call for a different kind of teaching. It is, therefore, a work of wise benevolence for employers, or others, to establish or favor such schools.

At this point we may suggest some reasons why industrial drawing, of one kind or the other, may generally well be the first subject of industrial education to be introduced in experimenting on the whole subject. First, it requires less change in buildings or class organization. All the instruments and materials required by it can be used in school-rooms and at school-desks, as these are now very generally constructed and arranged. Second, it can be pursued by the use of text-books as other subjects are, supplemented by whatever oral teaching the teacher chooses to give, and aided and illustrated by any such simple mechanical objects as the village carpenter can make, or such as pupils can make, or pick up here and there, to form a school cabinet of objects to be given out to pairs or threes of pupils to work on together, in drawing them to scale from measurements, with text-books at hand to give the guiding principles. Then, at exhibitions, the objects (a model of a railway-switch or frog, or rail, a simply moulded wooden or stone gate-post, door, window, book-case, dormer-window, etc., etc.,) could be shown in connection with such drawings of them as high-school, academy, or upper grammar-school pupils could easily be taught to make. Third, and chiefly, the subject, thus otherwise conveniently taken up, is also fundamental to many industrial pursuits, as already sufficiently indicated, and may therefore well precede them as a common foundation for them all.

Having now shown about as fully as can be done, short of a virtual abstract of a set of text-books, what mechanical industrial drawing is, we will close by attempting brief answers to two broad, practical questions connected with it and with industrial education generally.

First: What, it may be asked, is to become of "discipline-studies," as distinguished from information or fact-studies? We answer by boldly denying the existence of the distinction implied in the question, and by substituting for it one that we believe to be real and applicable to all studies; viz, disciplinary, or merely fact-giving *methods.* Who doubts that even philosophy might be studied by merely memorizing the conclusions which great thinkers had reached without following their course of thought; or that Greek grammar and composition might be taught, after a fashion, as a system of facts and rules without touching the grounds of those facts and rules? On the other hand, take natural history as a subject that might be instanced as preëminently one of observation only. We observe that the bone which we call the "wish-bone" is slender and detached in some birds, and stout, short, and strongly attached to the main breast or under-body-bone in others. So far, facts; but if we search out the reason for these differences, and discover their relation to the powers of flight and the habits of the bird, we are exercising our reasoning faculties upon the subject, and making natural history a disciplinary study. To realize this far more fully, one has only to read Agassiz's writings on classification in natural history; and, in general, any subject becomes a disciplinary study when pursued with constant attention to the *why* as well as to the *what* and the *how* of its elements; and any material construction,—building, machine, or whatever else,—each of whose parts is shaped and located for a known reason, is, at bottom, as truly a piece of intellectual composition as is a printed paragraph, in which each word is chosen and placed as it is for a conscious reason.

Second: With society so much divided, as it would seem that it might be by so much added variety in education, and by so many different schools as industrial education would introduce, how is it to be kept as homogeneous in character, feeling, and spirit as is desirable,—yea, indispensable,—for the best welfare of a people? The grand importance of the question justifies a reference to the highest themes in reply. Evidently it is to be done by something common to all, and immeasurably above the separate studies and pursuits of each; by some all-embracing interest, so grand, so lofty so enduring, so inspiring, as to sink out of sight, or fuse together into one, all, and all manner of merely earthly distinctions. The universal study of any one agreeable and elevating subject, as music, morals, or a pure literature, or the cultivation of any one ennobling sentiment, as patriotism, will do something. But what, that the heart or wit of man can conceive, can compare with universal recognition of "One Lord, one Faith, one Baptism, one God and Father of all, who is above all, and through all, and in you all," and that "One is your Master . . . and all ye are brethren," who should ever be "in honor preferring one another"; that the really greatest is he who serves most and best; that there are "diversity of gifts, but the same Spirit"; and "diversities of operations, but the same God which worketh all in all," and, in a word, the recognition of the whole collection of blessed and glorious truths and counsels which shine throughout the New Testament as the stars in the firmament,—each imperishable, and differing only as "one star differeth from another star in glory."

With unity in such sentiments as these, maintained by spiritual education of a high order, there need be no fear of estrangements or jealousies, however great the diversities of gifts and of operations, or of the agencies which exist to cultivate the gifts and assist the operations.

THE ORIGIN OF THE FIRST GERMAN UNIVERSITIES.

BY G. G. BUSH, PH.D.

In treating of the origin of the German universities, it seems desirable to give first a brief sketch of the steps of development which preceded the renaissance or revival of classical study. This, it is thought, will be readily conceded when it is shown that in Germany the universities were largely reproductions under new conditions of that which had long existed, while in Italy, France, and England they were, in a certain sense, new creations.

The Dark Ages.—During the period known as the Dark Ages there was in reality much intellectual activity. This is especially true of the century that produced so remarkable a man as the Venerable Beda. The period of his life,—the close of the seventh and the beginning of the eighth centuries,—may well represent the time of the transition from ancient to modern history. The impression he made upon his age was evidently deepened in later times, for we find that his writings were, in the Middle Ages, the basis of most of the chronicles that were written. To Beda are we indebted for many of the treasures of ancient literature which, through his care and with the help of his fellow monks, were stored in the cloisters,—a secure refuge, as it proved, during the long centuries which intervened before the revival of classical learning. During the lifetime of Beda many schools were established in England and Ireland, some of which, as at Canterbury and York, gained in the next century great celebrity, but were eventually swept away by the plundering Normans and Danes. Near the close of the ninth century education found a noble patron in Alfred the Great. Not only did he establish common and high schools throughout England, but he was also the founder of the University of Oxford, to which he assigned three buildings to be devoted respectively to the study of grammar, philosophy, and theology.

In the year that Beda died (735) Alcuin,—who was in some sense his successor,—was born. Though England was his birthplace, the period of his active life belonged rather to France and Germany, where he had the oversight of the schools established by Charlemagne. Of these schools the best known were at Tours in France, and Fulda in Germany. It is doubtful if they did more than impart a knowledge of the rules of grammar and rhetoric, and enable the pupil to write in indifferent Latin, and yet their influence was widely felt in the eighth and ninth centuries. The successor of Charlemagne continued to them the royal favor, and endeavored to establish others in Italy, but the time had not yet come for an intellectual awakening. Even among the best educated an acquaintance with Latin was looked upon simply as a key to ecclesiastical study. Greek was wholly neglected, and in the main the object of classical knowledge misunderstood. Such was the condition of culture at the close of the ninth century.

The century that followed has left almost no record in history. Fortunately, however, the gross ignorance which characterized it proved but the darkened portal of a new era which was to be ushered in during the eleventh and twelfth centuries. By a near view of the history of the period at which we have thus glanced, it will be seen that the term Dark Ages is not wholly felicitous, and, if admitted, can apply but indifferently to Western Europe, and not at all to Constantinople, which remained continually the seat of learning. Men versed in Greek literature formed the Byzantine Court, and the emperors, especially in the eleventh and twelfth centuries, distinguished themselves in the fields of dialectics and philosophy. It was also the golden period of Moslem rule which witnessed in Bagdad the rise and fall of a nation of no mean advancement in material wealth, or in literature, science, and art. Yet this intellectual activity in the East (and of the Moors in Spain) had no perceptible influence upon the West until in the fourteenth century, when, through the exertions of Petrarch and Boccaccio, Greek teachers were invited from Constantinople, and a study of Greek literature was revived in Italy.

The Rise and Influence of the Universities. — Since the twelfth century the universities have exerted a commanding influence upon the mental condition of Europe. The character of this influence has been in reality everywhere the same. In comparison, however, that of the earlier universities was much the greater, because books were then rarely accessible. These first schools originated somewhat after the Socratic method, and were not school-establishments in the usual sense of the term, as they were independent of State power, and realized in so far the idea of a literary republic. A man of acknowledged talent gathered about him a circle of students; in time this circle enlarged, other students were added, and thus by a kind of necessity a permanent school was founded. Knowledge was imparted almost wholly through verbal instruction, and yet so great was the fame of some of these schools that students traveled over a continent to enjoy their advantages, and retained connection with them through many years. Their prosperity, however, was not permanent, but varied from time to time, according to the popularity and distinction of the leading men of each.

Among the earliest universities there were three which seem to have had an equally high claim to consideration. These had been established at Paris, Bologna, and Salerno, and were devoted respectively to theology and philosophy, to Roman law, and to medicine. Exact knowledge of the origin of Salerno is wanting, but it is thought to have been the oldest of all the privileged schools, and, like the neighboring cloister, Cassino, to have owed to its position and to the commerce of the city its early and intimate acquaintance with the healing art of the Greek and Saracen physicians. It seems to have had no influence upon the form of the later schools, for these were modeled after the universities of Bologna and Paris. Bologna is said to have served as a model for Italy, Spain, and France[1]; Paris for England and Germany; but this can only be true in part, and it is to be specially remembered that the Reformation gave to the German universities a freer character. The contrast between the Paris and Bologna universities may be seen in the fact that in Paris the teachers were the corporation,—in Bologna, the students; in Paris the theological students had acquired in the cloisters the feeling of dependence,—in Bologna the republican spirit was predominant.

University of Bologna. — Unless we accept the work of Forenghari, there is unfortunately no complete history of this university. In the archives of the city of Bologna two different foundings are given. The earliest date places its origin in 433 A.D., and names as its founder the Emperor Theodosius II. It is more probable, however, that its growth was gradual, and that for a long time there was no corporation and no constitution, but that, finally, as the number of students increased, its rights were acknowledged by the emperor and a real university began to take form. The first fact of which we have certain knowledge is the "privilegium" granted by Frederick Barbarossa, at Noncaglia, in 1158. At the close of the twelfth century, when the first rectors were chosen, a conflict arose between teachers and students respecting the executive authority. As the right to exercise it was claimed by both parties, the settlement of the question was left to the Pope, who decided in favor of the students, and the rector,—who was the acknowledged head of the university,—was then chosen from their number. There was originally at Bologna only a school of law, and this was divided, according to the locality from which the students came, into Citramontane and Ultramontane. But some time in the thirteenth century, schools of medicine and philosophy were established, but their right to form a component part of the university was not conceded until 1316, when they were allowed to aid in choosing a rector. To these a school of theology was added about 1360 by Pope Innocent VI., and at about the same time a second school of law with a separate rector. The rectors were chosen annually, and, as a pre-requisite to election, each candidate was required to subscribe to the following: That he had been a student of law for at least five years, was a member of no cloister, a *clericus*,[1] unmarried, twenty-five years old, *and rich.*

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[1] It is noteworthy that the French schools were modeled after Bologna, and not after Paris.

The title *magnificus* was first given to the rector in the fifteenth century. Previous to this he seems to have had no special title. In 1425 mention is made of the election of a professor to the rectorship, from which we are, perhaps, to infer that the professors were enrolled among the students. The students at Bologna were divided into twenty-two nations (*nationes*), and the representatives of these,—usually one for each nation,—formed the senate or council of the rector, and were called *consiliarii.* The other public officers were a *syndicus*, who represented the university before foreign courts,—a notary, a treasurer, and two beadles.

The penalty of death and confiscation was threatened citizens, as well as native and foreign professors, over fifty years of age who should be found guilty of drawing away students to other law schools.

The title *doctor*, as well as that of *magister* and *dominus*,[2] was in use at a very early period. An office cannot thereby be meant, as it did not then exist. Irnerius, one of the earliest professors, is called in the records *judex* or *causidicus*, by contemporary writers *magister*, but never *doctor.* Walfredus, who was professor somewhat later, was called doctor, magister, or judex. After the permanent establishment of this university,—*i. e.*, about 1150,—the name and dignity of doctor seem to have gained much in popular esteem. The title was then only conferred after an examination by such members of the faculty as had already received this degree. About this time doctors for each a particular grade was given. It is quaintly stated that the of canon law are mentioned, and in the thirteenth century doctors of medicine, grammar, logic, philosophy, arts, etc., at which time the title ranked higher than that of master (*magister*). Previous to 1304 it was given only to members of the university faculties, but after that it came to have very nearly the significance which is now attached to it.

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[1] In general, in the Middle Ages, the universities were regarded as ecclesiastical establishments. The *studium*, originally limited to the spiritual order, seemed to be the business of the clergy, so that *scholaris* and *clericus* came to have the same meaning.—*Tholuck:* "*Academisches Leben.*"

[2] The title *dominus* originated in the time of Justinian. This emperor placed the law-school at Beyrout under the care of the presiding bishop, who became law-professor, and transferred his former title to the new dignity.

The doctor examination was twofold, — public and private, — and examiners were required "to treat the candidate in a friendly way as their own son, on penalty of a year's suspension." The oldest known doctor's diploma is that of Cinus in 1314. Before this could be received the candidate was required to take oath that he had studied the specified time, had paid all dues, would in the future obey the rector, and not teach outside of Bologna. In 1219, Pope Honorarius III., to guard against misuse, decreed that the archdeacon of Bologna should also give his approval; but previous to this, and for some time thereafter, the degree was never conferred by emperor or pope.

The lectures began each year on the day after St. Luke's (Oct. 19th), and extended throughout the year,—the long vacation beginning the 7th of September. Including Easter and Christmas there were in all about ninety holidays. Besides these, lectures were never read on Thursday,[1] for this day, as the old records inform us, was not set apart "for the care of the body." Before the fourteenth century there were no public lecture-halls, and the lectures were accordingly held in the houses of the professors. The time was limited to an hour and a half, and the morning lectures were required to begin at daybreak and close before nine o'clock.

We have no satisfactory information respecting the tuition-fee. We know, however, that a contract was always made between professors and students, and we learn that Odofredus received for one course of lectures an equivalent of $400. In other cases the fee for each hearer was fixed at a very low rate,—probably from one to two dollars. It was not uncommon for new professors to increase their popularity by lending money to the students, or, in other words, paying a fee to secure attendance upon their lectures. This, however, was considered a violation of discipline, and was forbidden, except in the case of students who had received permission to lecture gratuitously.

It was the usual custom for each student to intrust himself to one of the professors, who exercised a sort of guardianship over him during his stay, and represented him, when necessary, before the university authorities, At a later day we find this custom in some of the German universities. In the thirteenth century there were universities at Padua, Pisa, Vicenza, Vercelli, and in other cities of Italy,—offshoots in part from Bologna, and, like most of the schools of the Middle Ages, devoted to the study of law.

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[1] The same custom is still observed in Tübingen, South Germany.

University of Paris.—The reputation of this university reaches, also, much farther back than the mention of any definite constitution. As early as the twelfth century, men renowned for their scholarship, were found here both in the departments of Theology and Philosophy. The oldest authentic documents are two decrees of Pope Alexander III. (c. 1180), which relate to the right of the chancellor to receive fees for granting permission to lecture. In a decree of Innocent III. (1198–1216), the word *universitas* first appears. Previous to this, and for two centuries following, the usual expression was *studium generale.*

The University of Paris called itself the daughter of the king, and yet it owned no buildings, and was in other respects so poor as to be obliged to seek shelter in the cloister.

Statutes were enacted by the different faculties trom time to time to meet special cases; and some, especially at the close of the sixteenth century, were similar to those already in force in other universities, but a complete statute-book never existed. In Paris the professors and, in exceptional cases, other masters of arts or doctors, constituted its senate or assembly, and the university was never divided here into two or more separate bodies, as happened at Bologna. The professors and students at Paris, without reference to their departments of study, belonged to four "nations" which received the names of France, England (later Germany), Picardy, and Normandy. These nations, represented on public occasions by their procurators, exercised a controlling influence in university life. It is true that the faculties were represented by their deans, but the faculties themselves were members of these nations.

In the middle of the thirteenth century a difficulty arose respecting the Mendicant Friars, — who attempted to force their way into the university chairs, — which resulted at first in the withdrawal of the theological faculty, and later of the faculties of medicine and law. Soon after this the four nations came to be regarded as the philosophical faculty,—that is, the College of Liberal Arts. Henceforth the four departments of Theology, Law, Medicine, and philosophy had mostly separate lecture-rooms and churches, and to this period properly belongs the origin of the four faculties.

The *collegia* or colleges were originally intended for poor students, and were common to Italy, but did not exert the influence there, or reach that development which gave them their great popularity in France and Germany. Their organization and rapid growth will be, perhaps, best seen in Germany, where, as in Paris, they came in time to be vast boarding establishments, and included nearly the collective body of the University. The head of the University of Paris was the rector,—the choice being made by the professors of the philosophical faculty, as the members of the other faculties were neither eligible to the rectorship nor permitted to share in the elections. Later the concession was made that the deans of the three other faculties could share in the deliberations. When, therefore, an election took place an electoral college was first chosen,—each of the nations being represented by a single elector,—and this college chose the rector. At first the elections were held every four or six weeks, but after 1279 only at intervals of three months. The sole condition of eligibility, aside from that already named, was that the candidate for this office should be unmarried.

The University, as a whole, stood originally under the jurisdiction of the king in person, but after the middle of the fifteenth century under the Parliament of Paris. Criminal matters, which, after about 1200, belonged to the spiritual court, were transferred to this parliament. The civil jurisdiction, which had also been exercised by the spiritual court, was intrusted in 1340 to the Provost of Paris. To the university court belonged the settlement of difficulties between professors and students, the jurisdiction in case of insults to the rector, violations of discipline on the part of the students, and like infractions of order. The usual punishment was by scourging upon the naked back in presence of the rector, and this alike to students and *baccalaurei*. This form of punishment is mentioned as early as 1200, and was still very common more than two centuries later. In addition to the officers already named, there was a *conservator* appointed by the Pope, who, when the spiritual privileges were violated, tried both civil and criminal cases.

In the early period of its history the University of Paris was looked upon preëminently as a theological school, and the professors, whether theologians or not, were forbidden to marry. The first to obtain a release from this prohibition were the medical professors, in 1452. For the law professors it remained in force until 1600, and for those of philosophy until comparatively recent times.

It is said that the tuition-fee in this university was properly voluntary. From the poorer students nothing was expected, and from the rich not more than six ecùs (c. $12) a year for each professor whose lectures were attended

If we compare this university during its early history with those of neighboring lands we shall see that it had much greater influence in the councils of church and state, and, besides, aided more powerfully than all others to give form and character to the new universities of Germany.

The New Era in Germany.—Before the opening of the twelfth century the parish and cloister schools were common to all portions of Germany, but of their origin and development during the two or three centuries preceding very little is known. With the twelfth century begins the intellectual activity of Germany. The spirit that had been aroused in Italy and France was caught up and found a permanent home here, where a zeal for knowledge has ever since been a special characteristic of the nation. German students wandered to Italy and France, and entering generally the universities of Bologna or Paris, sought to gain there the culture which their own land could not give them. This had not long continued when a desire was awakened for similar high schools at home, and this found expression at the Lateran Council of 1215, when Pope Innocent III. ordered that in every cathedral school' there should be at least one master of arts, and in the chief cities also a master of theology. In consequence of this decree there arose at the beginning of the thirteenth century a *studium particulare* in the church of St. Veit, connected with the castle of Prague. Here lectures were delivered to the native clergy and courses of study pursued, but the academical degree conferred was valid only in Bohemia. When, in 1248, Ottakar II. endeavored to dethrone his father, King Wenzel, the school was necessarily affected by the commotions of the time, but soon thereafter regained more than its former prosperity, and was frequented not only by students from Bohemia, but also from Austria, Bavaria, and other neighboring lands. Lectures were read upon grammar and logic and the *librōs naturales* of Aristotle.

At the close of the thirteenth century an effort was made to found a university in Prague after the model of Paris, but met with much opposition from the States of Bohemia, who feared that an increase of learning would endanger their power. A half-century later (1346), when Charles IV. mounted the throne of Bohemia, the circumstances were more favorable, especially since he, as co-regent with his father, had already gained the confidence of the people. Still the civil and moral condition of the European States at this time was most appalling, and the magnitude of an undertaking that must necessarily array against it an established spiritual power, whose permanency would be endangered by the removal of ignorance and oppression, was exceedingly great. Besides, the evils to be overcome were continually increasing. Among these was the practice of unparalleled extortions, senseless displays amid their court scenes, and unchecked extravagances on the part of the nobility which had naturally caused an estrangement to grow up between people and rulers. Unfortunately the papacy was then supreme,— emperors and kings, nobility and clergy confessing their allegiance to it,—while the pontiff, with empty arrogance and blasphemy, was claiming for himself not simply divine attributes, but mercy more infinite than the Saviour's, saying that he "alone could save souls from purgatory, and a special heaven was his sure inheritance." While it seems necessary in general to condemn the influence of the spiritual orders, this praise should not be withheld from them that behind the walls of their cloisters they preserved an interest in agriculture, commerce, science, and art.

As early as the thirteenth century the writings and teachings of some of the foremost men of France and England found their way to Germany, and had no little influence in shaking its future history. Though the masses were mostly ignorant and superstitious, there lay dormant in them a desire for freedom, which, when aroused, scorned all subjection and defied inquisition and prison-walls. With the watchword of "Chain not the spirit!" a struggle for culture began,— only the more ennobled by every hindrance,—such as scarcely any other century has witnessed.

Thus it happened that the cry which was long before uttered, and which came in part from the cloisters, found a fitting response in the free republics and other corporative unions which were established in the interest of human rights. The good accomplished by these republics, which arose in Italy and ruled half the world through their commerce, cannot easily be over-estimated. The same may be said of the German cities with their firm alliances which they had formed partly with one another and partly with the south and southwest of Europe. Civilized Europe was thereby transformed into a commonwealth founded upon the rights of citizens, and closely united through commerce and other interests to the welfare of the cities. By conceding that differences of religion and national characteristics might subsist together, a sure basis was laid for industry and trade, for art, and for the freer development of scientific institutions. So great had the evils of the church become that the authorities of the cities determined to abolish the spiritual sovereignty. In this they were aided by most of the leading men of the time, who, severing their connection with the clergy, formed themselves into an independent body. Their power was first felt in the establishing of secular schools, and as these grew in consideration and influence the schools of the cloisters suffered a corresponding loss. The new schools were in reality unions which, through endowments and the granting of privileges, acquired in time a fixed location whereby the transition to those free corporations, which were recognized by the states or cities as necessary, was made easier. Like so many corporations of the Middle Ages whose privileges were securely guarded, these also under the protection of the government reached their full development.

THE TEACHING OF DRAWING IN GRAMMAR SCHOOLS.

BY WALTER S. PERRY.

It is admitted that the public schools cannot give what is called a technical education,—that is, an education which shall prepare for particular trades or industrial occupations; at the same time the growing importance of these occupations makes it necessary that in our public education we consider their demands in our provisions for the development of manual power, skill, and taste. What our public schools can give in the way of industrial training, which shall at the same time be of fundamental value in general education, is one of the important educational topics of the time.

A strong conviction is arising in many minds that more attention should be paid to manual training in education than hitherto, and we have heard much on this subject in educational conventions. Now it must be admitted that before there can be any broad development of manual training in the schools, or technical or industrial training of any kind, there must be broad, general instruction in industrial drawing. This fact is so generally recognized, that in Prof. Thompson's valuable essay on "Apprenticeship Schools in France" we find these words: "Technical education without education in technical drawing is a delusion and a sham;" and in a report by a distinguished French commission on industrial education are found expressions equally strong in regard to the importance of drawing as a basis for industrial training.

The introduction of drawing, therefore, into public schools should be regarded as an important step toward general industrial education, and in view of this fact, what is taught as drawing in the schools becomes of the utmost importance both practically and educationally.

The subject is comparatively so new a one in education, and efforts to introduce it into schools have been so independent of one another, that there has been no opportunity till now for a general exchange of views and a comparison of results. Further than this, teachers of drawing have hitherto labored quite independently of one another, and have found it extremely difficult to get any proper recognition of the study in their respective schools. Let us hope, however, that this discussion inaugurates an era of conference dancoöperation in this matter. The field before us is a broad one, and to guide us we need all the light that experience can give. Industrial education is becoming a question of great importance, and drawing is seen to be one of the fundamental elements in this education; yet it is a significant fact that there are but few trained teachers directing the study in the schools, while some of the very largest cities have only one teacher of drawing for all their schools. We need to elevate the educational and practical importance of the subject before the public; to make clear the aims of our instruction; and as the first step to this end, we should endeavor to come to some general agreement in regard to what is to be taught as drawing, and also in regard to proper methods of teaching.

How is Drawing Usually Taught?—It has been remarked that it is quite universally recognized that drawing should be taught in the public schools, and in the best schools of the country it is taught, but *how* is it taught? I think I am safe in saying that in more than half of the schools that claim to teach drawing the subject is merely mentioned in the course of study, and not much else can be said in regard to it. Vague directions are sometimes added, but these are of little practical value to the teachers, who, left without any intelligent idea of the object or aim of the instruction, do little or nothing with it. In many places where special teachers are employed, and where regular work is attempted, there is not a fixed purpose or aim in the instruction, and the system or method is therefore changed as often as there is a change of teachers; in fact, schools might be mentioned which have been experimented upon with three or four different systems in as many years.

Under this condition of things, with no fixed principles established, school committees are at the mercy of agents of so-called systems of drawing who crowd upon them from all parts of the country; and the average committee is puzzled to decide between their conflicting claims. With rare exceptions, the member of the school board is entirely ignorant in regard to the study; his ideas of its practical and educational value are usually of the vaguest kind, and quite possibly he regards it as an ornamental study only. Such persons see nothing that looks pretty upon the printed page; a skillful agent dwells upon the training of the eye and hand, and the necessity of securing more beauty in our industrial objects; votes are secured, and the question of industrial training in the schools of communities may be given in an entirely false direction. Teachers and children accept the inevitable, and boldly plunge into work of which they understand neither the object nor nature.

And with all due respect to my co-laborers, I must say that the ideas which prevail among teachers of drawing, themselves, have tended not a little to add to the confusion of mind which prevails in regard to the nature and educational treatment of the subject. Some think drawing means one thing, and some another; and the member of the school board may well look puzzled, and ask what is meant by drawing,—what are the underlying fundamental principles,—when we, as teachers, say there must be taught Freehand Drawing, Model and Object Drawing, Dictation and Memory Drawing, Geometrical and Mechanical Drawing, Perspective, Historic Ornament and Design; a nomenclature that is enough to discourage any teacher or committee. All this tends to confuse, because it is not an educational arrangement. Is it not time for us to get out of this vague, indefinite, into some more coherent method of work? To make a beginning in this direction, it seems to me, is our duty and privilege.

What is Drawing?—Drawing is the language by which a true idea of the form, the appearance, and the decoration of an object is conveyed from one person to another. It is the main language of the skilled constructive industries, and its importance to the designer and artisan is only comparable with reading and writing. Consider for one moment that wonderful piece of mechanism that breathes the breath of steam; who has not seen it, as the piston moves swiftly backward and forward with the same steady motion? The various parts move in their allotted places. As the great wheel turns, electric life seems to fly along the belt; pulleys and shafts catch the spirit, and drive here and there the endless number and variety of machines, ever changing raw materials into goods necessary for our life and comfort. Again, look at our buildings, at our ships that sail the sea, laden with the commerce of the world,—all these and the thousand and one industrial objects about us, intricate in design, wonderful in construction, beautiful in ornamentation, were first conceived in the brain of man; but their construction has been made possible mainly by the use of this language-drawing, which enables the designer to express the minutest fact in their construction so as to be readily understood by the workman, and embodied forth by his skilled hand.

General Divisions.—Inasmuch, then, as drawing is the universal language of our vast manufacturing industries, it certainly would seem that the drawing which we teach in the grammar schools should be such as will include the elements of this all important means of expression.

But drawing has applications not alone in the *construction* of objects; it is the principal means by which we express ideas in regard to the *appearance* and *decoration* of objects; so that the subject considered as a whole may be regarded as embracing three fundamental divisions:

Construction—Drawing as applied in industrial construction,—the making of objects.

Representation—Drawing as applied in representing the appearance of objects and of nature.

Decoration—Drawing as applied in ornamentation.

Sound instruction in drawing means teaching a knowledge of form and its application in these three divisions.

Subject-matter to be Taught.—We have seen that the subject has a threefold division into Construction, Representation, and Decoration. These three are but two kinds of drawing, so far as execution is concerned,—that done by the free hand, and that done with instruments,—under these three general divisions of the subject we may teach the various kinds of drawing known as freehand, dictation, memory, object, geometrical and mechanical drawing; but with a double value, inasmuch as the varied work, whether it be freehand or instrumental, may be so planned that it will tend toward one or more of the three general divisions of drawing.

Let us consider briefly the details of these three divisions, and first in educational and practical importance must we place the division of

Construction.—I think that drawing has failed to receive just recognition because of the failure to recognize the great importance of the constructive division of the subject. This forms preëminently the educational and practical side, and yet it is the one which has usually been ignored, while the pictorial and decorative sides have been given undue prominence. The fact that drawing is so often spoken of as an ornamental study by well-informed persons is proof that its educational and practical value has not been at all comprehended. A great many say, in support of the matter, that drawing is important; but why is it important? When these æsthetic advocates of drawing are brought to the point of defending the practical importance of the study, they cannot tell *why* it is important; they are at a loss for good and substantial reasons. They aim to give what they call training to the hand and the eye, but this, though very important, is very indefinite in its results, and does not touch one of the most practical reasons for making drawing an important branch of education. We must recognize that it is the practical usefulness of drawing in adult life that warrants its introduction into the public schools, and we have only to examine how it is made use of in our constructive industries to see that the constructive division is not only the most practical division, but at the same time the most educational one.

When drawing was first introduced into the schools, one of the chief reasons given why it should be taught was, that children might learn how to make and to read working-drawings before passing from the school to the workshop; but nowhere could be found a system of books that brought the subject down to the grammar schools; and, as a teacher, I felt somewhat afraid I would be questioned upon the matter. Not a book had I to show which held between its two covers one single drawing that represented the simple projections of a common object so arranged as to give a pupil, or teacher, any idea how such drawings are made use of by the artisan.

And when I first suggested to a gentleman, who is now doing very much to develop this feature in the public schools at large, that in our middle schools this subject must be taught, I received this answer: "I see its great intrinsic value, and I hope soon to see it introduced into the lower schools; but at present it cannot be taught; teachers would cry out against it as a subject too difficult to teach, and the opponents of drawing would say we were endeavoring to teach orthographic projection, and would thus frighten timid people with the very word."

Allow me to add, that this subject of constructive drawing, or the making of working-drawings, has been taught for several years in the schools of Worcester. I have found it a feature that develops from primary object-teaching of form without a break; that is readily comprehended by teachers, and the one subject in which the pupils are the most interested.

Why has Construction not been Taught?—I believe it has not been taught in the grammar schools hitherto because it has been thought necessary to treat it scientifically, as laid down in the regular text-books on orthographic projection, with the various planes of projection, etc. I have in my possession a small book, intended for grammar-school use, written by one who holds a prominent position as instructor in one of our leading institutions, yet I cannot believe the author ever taught a class of young pupils for five minutes. He begins with the projections of points, lines, planes, etc.; projections of things which cannot be presented in solid form, and the treatment of which does not appeal at all to the perceptive faculties of pupils. Now working-drawings are simply drawings that tell the facts about objects, consequently, to teach such drawing in the schools we have only to teach pupils to observe the facts of objects, and then to express by drawings in the simplest way, by the free hand or otherwise, what they see; and I hold it to be an educational absurdity to require pupils at this stage to learn about planes of projection, and all that is usually first presented under the head of orthographic projection, and a great wrong to the pupils to omit this feature till they are of an age to comprehend such a scientific treatment of the subject.

Geometry forms the basis of all drawing. This point is so well established that it needs no comment, but in answer to those who claim that pupils, when they begin the study of working-drawings, should learn just what is meant by that projection which is made by drawing lines, from every point to be projected perpendicularly to the plane of projection, and learn to work to scale, etc., it may be asked, Is it necessary that pupils should learn to demonstrate theorems in geometry before practising geometrical construction? Indeed no, and so I say that drawings expressing the facts of form, executed, they may be, roughly by the unaided hand, may be made to convey unmistakably the relative dimensions and positions of all portions of an object. And this kind of freehand work is as valuable as any other, as regards the training of the hand and eye, while it possesses an educational value not to be compared with that attained through the mere copying of abstract forms.

How is Construction to be Taught?—Inasmuch as in this paper I must give my own methods of instruction,—knowing full well that they offer many opportunities for improvement,—an outline of the work in this division is presented with the accompanying illustrations, in order to bring the nature of the work clearly before you, that it may be readily comprehended by those who will take part in the discussion.

A cylinder, a square prism, a double cone, and a piece of paper oblong in shape, and in size about equal to the upright view of the cylinder or block, are taken into the school-room. It is explained to the pupils that they are to learn to make just such drawings of the first three objects as a carpenter would require if the objects were to be constructed from drawings; and after a much fuller explanation than can here be given, a drawing is made on the board to represent the side or upright view of the cylinder, and at the same time, the pupils are questioned in regard to the various lines necessary for its construction. An upright view of the square prism is then made in the same manner, and afterward one of the paper. The three drawings are yet all alike; they are oblongs, though made from different objects. If now the pupils are requested to observe the thickness of the objects, they see the necessity of other representations to fully describe and to distinguish them. If they are asked to state what should be drawn to represent the other view gained in looking directly at the end of the cylinder,—the other fact of the solid,—the true shape of the end is perceived, and the answer is "A circle." Now by continuing the vertical lines of the oblong upward, by dotted lines or lines of projection, and drawing the circle to touch these lines, all the facts of the form of the cylinder are expressed. This much being done, pupils will see at once what is necessary to express the facts of the square prism and piece of paper,—the adding of a square and a straight line. By proper questioning the pupils are led to see that something more is needed, that the length and breadth are to be shown in feet and inches, and the manner of indicating feet and inches by the signs in use may be explained.

Following this, in a similar way, working-drawings are made of other simple objects, from directions elicited from the pupils.

Children are exceedingly interested in this, their first lesson in making working-drawings. It is a revelation to them, a practical illustration of drawing being used as a language to communicate ideas; and besides the practice in drawing which the pupils have, is not such work most valuable in training the powers of perception and comparison, thus daveloping the thinking-power? And just here may be mentioned the great differeuce it makes in the interest, and I may say value, of the exercise if the pupils are required to make the drawings as though they were the working-drawings for a carpenter, to be used for practical purposes, rather than the simple representation of dry facts.

Foreshortening in Construction.—Owing to the foreshortening of lines and planes, there may be found some trouble at first in teaching the geometric views of some objects. Take the steps for illustration. Pupils see at once what the end view should be, because all lines to be represented are in the same plane, but with the front view it is different. If, however, we cover up all the steps of the model with our hands, except the first or lower step, and ask what should be drawn to represent that alone, there is no hesitation,—the answer is, "An oblong." By covering all but the second and leaving that exposed, the answer is the same in regard to that; and so with the rest. The pupils are led to see that the combined height of all these oblongs cannot be more than the height of the steps as seen in the end view,—that the steps can be no higher when seen from the front than from the end; and so, with fuller explanations than this paper admits, they are led to see the proper height and position of all the oblongs, and the best way to draw them.

Similar explanations might be made of the manner of drawing the triangular prism, the top view of the square pyramid, the top view of a common bell, and the different geometric views of other objects.

In What Year is this Work to Begin?—At the present time in Worcester, where children spend nine years in the schools below the high school, and begin their school-life at the age of five, this particular kind of drawing, of representing intelligently two or more views or facts of a solid, is begun in the fifth year. It might perhaps be commenced earlier with profit; but in the years previous the work is of that nature in the representation of one view that this is only a continuation or further development; and considering all the other things to be attended to in the first two years that children use books, and as the subject matter extends over the period of five years before the pupils graduate from the grammar schools, it seems to me it is quite early enough.

But you may ask, "How is this subject to be continued? Is this matter of making working-drawings to be carried out by free hand through all these subsequent school years?" Pupils throughout the whole course in drawing have much practice in free-hand work. I think that in about the sixth year this particular division of the subject should be placed on a more thoroughly geometric mechanical basis. Geometry, as has been said, forms the basis of all drawing. The children in their early training become familiar with all the principal geometric forms. They make use of them in many ways, and in their first work in construction they represent free-hand the geometric views of the simple objects used.

Now in about the sixth or seventh year of school it is customary to introduce geometric problems in addition to the various kinds of free-hand work; and what are these problems? They mainly relate to the drawing of lines in all their geometrical relations to each

NOTE.—A teacher in one of our schools has found this constructive drawing of great assistance in teaching arithmetic, when surface areas are to be determined. For instance, if the surface measurement of a box is required, the plan, and side and end elevations are drawn to scale, and the measurements marked on the drawings. Having these drawings before the eye, the pupils readily work out the problems. In looking over a set of arithmetic papers, I observed on each paper, drawings which represented the four sides of a room, with the doors, windows, and base-boards correctly located, and with the various measurements indicated on each. The pupils were required to find how many yards of wall-paper it would take to cover the walls.

The teacher informs me that in every case, where the work deals with objects, drawings to scale are first made of the objects, and, as a consequence, the pupils understand much better the problems, and much better results are achieved.

other; to the accurate construction of angles and the plane geometric figures. Now, instead of giving so much attention as hitherto to the construction of these forms abstractly, I would advocate more attention to the application of plane geometrical drawing to the construction of plans, elevations, and sections of solid objects; these drawings to be made to scale. By so doing we shall bring the study of practical geometry in the schools to definite practical results.

Representation.—I have dwelt upon the subject of Construction so long that it may have seemed to you that I came here with only this one thing in mind. Not so, however; a little space has been left in which to discuss Representation and Decoration. They have been accorded a second place in this paper for several reasons, one of which is that they have for a long time held prominent places in the schemes of drawing, while Construction has not until recently been even recognized. Moreover, I wish to show that constructive drawing forms the basis of representative, and in a measure of decorative drawing.

To ask pupils to represent an object pictorially, before the facts of its form are known, is a great mistake. But in many books, and also schools, the work is so arranged that pupils copy pictorial representations of objects, and also draw directly from the objects themselves without the slightest idea of the geometrical construction of the same. One might as well copy a picture of a house without any idea of the laws of perspective, aud expect that knowledge would be gained thereby.

How can the Pictorial Representation of Objects best be Taught?—This branch of the subject, if strictly carried out, requires more individual instruction than any other. No two pupils see the object alike, and in our crowded schools of forty-five and fifty children, with no conveniences for object-drawing, and at the best but a small number of models to draw from, the question how it should be taught so as to be of the most profit possible to the pupil, is one which has troubled many, and has not yet been very satisfactorily solved.

We must, of course, begin with circular objects. The appearance of a circle in different positions of obliquity to the eye can be explained by the use of a large circular piece of paper or cardboard in the teacher's hand. After the proper practice by the pupils in drawing this in different positions, and in the use of the pencil in determining the proportional measurements, the various cylindrical objects are to be used; but how are the drawings to be made? Are they to be made directly from the object?

Unless a room is very well adapted for object-drawing (which is rarely the case), and there is but a comparatively small number of pupils, my experience is that the results are very unsatisfactory if the pupils attempt to draw directly from the object. I will make a short quotation from a former address which will explain in part my method of work:

> "If the space is to be filled with a cylindrical object, a cylinder, double cone, or vase may be used, and either the proportionate lengths of the various construction lines be given, or some one or more pupils may be required to work them out directly from the object. When these are sketched by all of the members of the class in their books, of one pupil may be asked what should be drawn at the top and bottom, and center if required, to represent the object, as he sees it; the width of one ellipse compared with another, and similar questions. Of another may be asked, what should be drawn, supposing the top to be on a level with the eye; of another, the center; and in this way each pupil in the room may be questioned about some one position, and then all be required to make a drawing of the object in one of these positions, which should be named by the teacher, that all may do the same. Their imagination is brought into play, and they learn to exercise their reasoning faculties. *Mentally* they all draw from the object; uniform and accurate work is the result. In a similar manner might be explained how rectangular objects, rings, square frames, and other objects in different imaginary positions are drawn by pupils; but this would lead to too much detail just now."

But some will say: "This is not model-drawing; we cannot call it model-drawing unless sketches are made directly from the object, and all measurements taken therefrom."

This I will not discuss, but will simply say that when the pupils take up drawing in the high school, and are given a group of models from which to make their first drawings in the prescribed course, but comparatively few need or receive much help, as they have become so accustomed to drawing in the most common positions the different geometric solids. Can we do much in the limited time devoted to drawing if we do not give some time to class work?

In this connection I will say that it seems to me well to have the constructive drawing of the object directly precede the representation, as many of the mistakes in representation are due to a failure to understand correctly the facts of the solid. On the left half of a page, therefore, the pupils may be required to make working-drawings of the object, while on the right half the appearance of the object in some familiar position may be shown.

Representation I would treat, therefore, as complementary to a study of the facts of objects,—to the construction of objects.

One point more: The drawing from objects in grammar schools should be from simple forms. It is a great mistake to require pupils to work from objects so complex in form and detail as to confuse pupils with too many lines. We should recognize the fact that instruction in drawing is primarily instruction in *seeing*, and that pupils fail in drawing more from inability to see than from inability to draw,

Decoration.—The term decoration is sometimes so used as to imply that it includes design, and all original designs, so called, must be arrangements of lines, units, and conventionalized forms in such a way as to cover a given space.

"Design," says Redgrave, "has reference to the construction of any work both for use and beauty, and, therefore, includes its ornamentation also. Ornament, on the other hand, implies merely the decoration of an object already constructed." Under the head of decoration, therefore, we are to teach simply surface decoration. I have remarked that construction not only is the basis for representative drawing, but that in teaching drawing in the public schools, where we have young children to deal with, constructive and decorative drawing are closely connected. The pupils must be led from simple to complex things through the illustrations gained in the use of familiar forms, and to know these familiar forms·thoroughly they must become acquainted with all the facts of these forms.

Shall pupils be given geometric figures in which to make accidental combinations of straight and curved lines? I believe not. They should, rather, first learn to design good forms,—to design units. But how? I hear one say, "By copying ornamental figures in their drawing books, they gain a knowledge of good form;" but pupils do not gain that knowledge of good forms through the mere copying of them that one might suppose. The copy is before them and they see but one line at a time,—the line they are drawing; they make an accurate copy of the whole by accurately copying each line, while a thought of that which gives beauty to the whole does not, except rarely, enter their minds. They should, certainly, be trained to consider the whole form; but this can be done in no better way than by requiring them to imagine and draw forms for themselves; and these forms must first be familiar objects upon which they can use their reasoning faculties in regard to usefulness and appropriateness, and can be not only seen but handled.

As a proof of what has just been said about pupils not gaining a knowledge of forms through the mere copying of them, I offer the following,—an exercise given several years ago in all the schools of the two highest grades. The pupils drew the construction lines for a vase, and were then told to draw a vase of good form similar in construction to some one of those previously drawn from copies in the book. But they were at a loss to know what to do. In some cases I made sketches on the board, and then quickly erased, in order to offer some assistance. The results were a great surprise, and were the same everywhere. I could hardly believe that those pupils who showed me such excellent copies in their books could be guilty of making vases so ugly and so useless in construction.

I think that pupils should no sooner begin to draw, say vase-forms, than they should learn to construct or design vase forms. I do not mean construct something entirely different from their copies, but they should learn to construct a beautiful form without a copy before them, and to know what gives to it its beautiful appearance, and to make from an ugly copy a drawing of good form. Having done this kind of work in the construction of familiar objects, they are better prepared to draw abstract figures or units, which units may afterward be incorporated into designs for surface decoration.

As the pupils advance from one grade to another and become acquainted with a greater variety of forms, both in the concrete and the abstract, their work of this kind, of course, advances from the simple to the complex. A drawing of a vase of a new pattern, or of an ornamental figure, may be put upon the board, analyzed before the class, and its various features explained. Rough sketches may be made to show how slight changes in parts would rob the whole of its beauty; and after everything possible of this kind has been explained, the drawing should be erased, and the pupils told to make a similar drawing, of good construction if a vase, and of a good decorative design if an ornamental figure; remembering that to reproduce exactly the drawing on the board should not be the principal thing in mind, but rather to construct or design a figure of good form, with all parts bearing the proper relations to each other.

Having found such work so very valuable in educating the eye to perceive good form in the construction of simple objects in the lowest grades, I think that one of the first things children should learn to do in decorative drawing is to design, in a similar way, simple ornamental figures symmetrical upon an axis. These figures may afterwards be combined to fill geometric forms; and when pupils have become familiar with simple units and the combinations of these units to form surface designs, they will be prepared to conventionalize leaves for purposes of design,—first from copies and then from the leaves themselves.

I have mentioned, and very briefly explained, the three divisions under which I think all the work in drawing must come, and, without claiming too much for myself, I think I may say that any system that does not include the three distinct divisions of constructive, representative, and decorative drawing cannot be recognized as complete. The best way to teach each division may remain an open question. You are to discuss this paper, and whether you accept or not what has been said, let me again remind you, in closing, that the first duty incumbent upon us as professional teachers of drawing is to emancipate ourselves from the confusing and non-educational array of technical terms so often used, and which have been quoted, and fix upon those fundamental principles which underlie the study of drawing in the public schools, and arrange them in regard to their educational and practical importance.

DUTIES OF SCHOOL SUPERINTENDENTS.

BY JOHN T. PRINCE,
Agent Massachusetts Board of Education.

The statutes of the State of Massachusetts define only in a general way the duties of a Superintendent of Schools. They simply say that "he shall have the care and supervision of the public schools," under the direction and control of the School Committee Nowhere in the statute-book is there given to him that authority and those strictly defined duties which are given to School Committees. In fact, it may be said that the Superintendent has no authority except what the School Committee gives him. The kind and degree of authority with which he is vested therefore depend entirely upon the kind of service that is desired of him by the School Committee. He may be expected only to see that the votes of the Board are carried into effect, and to perform certain clerical duties which it is not convenient for the members of the Board to do; or he may be called upon to render that service to the schools which the School Committee cannot collectively or individually give, and which is not given by the teachers. It is not necessary to discuss the former plan, as it involves a labor almost entirely mechanical, and cannot in any proper sense be called superintendence. It is rather the duties involved in the latter plan, or what may be called skilled supervision, to which attention is invited.

It is a most singular fact that, while the necessity of skilled supervision in all mechanical and mercantile establishments is fully recognized by all, it is not generally thought of great importance in planning and carrying out a system of education; and where the office of Superintendent is made, its duties are not uncommonly looked upon as a kind of convenience to the School Board rather than as absolutely necessary to the best interests of the schools. We do not have to go far to find the cause of a want of appreciation of the duties of a Superintendent of Schools. The business of education or teaching itself has not been fully appreciated. It is only just being recognized as an art and a science even by the teachers themselves, and it is no wonder that a work which everybody thinks himself capable of understanding and doing is thought to require no special skill of planning or directing. Assuming, then, that there is no work so difficult or so important as the training of the human mind, let us consider the part that a Superintendent may have in that great work.

In the first place, it will be seen from the very necessities of the case that the Superintendent must have ideas, and that he must be ready to use them when and where they are most needed. He should put himself, therefore, at once into the position of an adviser as well as an executor. As an adviser he has to act directly with the School Committee and with the teachers. In regard to what should he advise the School Committee? First, and most important of all, he should advise in regard to the qualifications and appointment of teachers. If the Superintendent is held responsible for results, he should certainly have a voice in selecting those who are to carry out his plans; and if he is at all fitted for the position he holds, he should understand better than any member of the Committee is likely to understand, the qualifications necessary to a good teacher. As the schools are largely what the teachers make them, there is no more important or difficult task in the conduct of our schools than that of selecting proper teachers.

Next in importance to selecting good teachers is procuring suitable books and apparatus, and it should devolve upon the Superintendent to advise both as to the kind and amount of these necessary means of teaching.

The plan or course of study is by law to be arranged by the School Committee. It is perhaps needless to say that they will rely very largely upon the advice of the Superintendent in performing this important duty. He has, or ought to have, in mind the order and dependence of the work desired from beginning to end; and the adjustment of it in terms and classes must necessarily depend largely upon the plan he has in mind.

Important as are these advisory duties in shaping the work of the schools, those which are of an executive character are even more important; for, in the performance of his executive duties, the Superintendent comes in direct contact with the schools and teachers. Classification, promotions, methods of discipline and teaching,—in short, everything pertaining to the actual working of the school,—must receive his attention. He should not only lay before the teachers his plans and purposes, but he should indicate theoretically and practically how they may be carried out, what errors should be avoided in discipline and instruction, and what methods will best accomplish the ends desired. In all this he must not only have reasons for his criticisms and advice, but he should give those reasons at all times, always respecting the intelligence and feelings of others. Nowhere are arbitrary dictation and the forcing of particular methods more improper than in the school-room. In all of his dealings with the teachers he must, in order to secure the best results, gain their confidence. He must make them feel that he is not only their director, but also their helper in all that pertains to their arduous duties. One of the best means of giving assistance is the teachers' meeting, which should be held as often as once a month, and in such divisions as will best enable him to accomplish what he desires. Instruction in general principles and in particular methods of teaching each branch should be given by the Superintendent, and if sufficient time for this is not found at the regular meetings, other times should be appointed. Such instruction will be found especially necessary for those teachers who have never received instruction in the theory of teaching. In addition to general plans and methods given at the teachers' grade meetings, it will be found necessary to supplement the printed Course of Study with certain topical details that cannot be given in a brief course. Here the danger of limiting and narrowing the teachers' work must be carefully avoided. Many of the topics may well be quite general in character, the teacher being allowed to supply necessary details. But frequently there will be weak places all along the line which need strengthening. Sometimes positive and particular directions, therefore, are necessary; and the Superintendent will find the teachers' meeting a convenient place to give and explain them.

But by far the most important part of the Superintendent's work is done in the school-room. Without an intimate knowledge of the work done there, he can neither be able to point out existing errors nor suggest needed improvements. His visits will assume a three-fold character; viz., (1) inspection; (2) teaching; (3) examination.

By inspection the teachers' work in the school-room is seen. Such criticisms, commendations, and suggestions as the Superintendent believes to be helpful should be made to the teachers freely and candidly. Such corrections or suggestions as would be useful to all should be noted and made the basis of remarks at the teachers' meetings. Other suggestions may be useful only to particular teachers, and can best be given frequently by writing them in a note-book placed in every teacher's desk for the purpose. Such a method prevents interruption of the regular school-exercises, and may sometimes prevent ill-feeling by allowing time for reflection. The Superintendent may find it well, sometimes, to take one week for a single subject or a set of subjects. For instance, one week he may give special attention to arithmetic; another to reading, geography, and history; a third to language, spelling, and writing; and a fourth to miscellaneous subjects, such as drawing, oral instruction, memory-work, etc. By this method he may be better able to compare results accomplished in the different schools and grades, and to correct the work accordingly.

Whenever a teacher or any number of teachers find it difficult to carry out any theory of teaching which the Superintendent has advanced, it is but right that they should request him to illustrate it with a class of children; and this request, if time permits, he has no right to refuse, even though the illustration be never so clumsy. Such failures in practice are a capital check upon visionary and poorly-considered theories. Or, if the Superintendent sees that a teacher is working upon a wrong plan, or upon no plan, it is incumbent upon him to give that teacher all the assistance possible,—and frequently the assistance can best be given by example in the classroom. Such assistance will be especially needed for young or inexperienced teachers, and as the teacher's ability is best demonstrated by his success in teaching dull and backward pupils, so the value of skilled superintendence is most felt in the weakest part of the teaching force.

The examinations by the Superintendent should be sometimes oral and sometimes written; sometimes especially applicable to a certain school, and sometimes uniform. Each method has its uses. By written examinations there are ascertained what all have really gained of a given subject, and their ability to put their acquirements in proper shape. Oral examinations test the amount of thought that has been awakened in the teaching, as well as of information that has been gained; while both kinds, oral and written, indicate to the teacher in a general way the direction that the work may take, and suggest to him new lines of thought. The giving of examinations "*for promotion*" I would not place among the duties of the Superintendent, for the reason that such examinations given by some one other than the teacher are both unfair to the pupils and detrimental to good teaching. Let us see how it is in practice. At the close of the year or term the questions are sent out to be given at a certain time, the results of which are to determine the pupils' fitness to be promoted to a higher class. The questions are largely upon matter contained in the text-book, or are upon information which has been given to all the pupils. If they are not thus made up, they certainly should be, for it would be manifestly unfair for children to be examined upon what they have not had, if such examination is to determine their promotion. Now who would say that a teacher can be free to teach as he should, with the prospect of having his pupils examined periodically from the text-book? He must be more than human to withstand the temptation to load and overload his pupils with matter upon which they are to be examined, for he knows that not only the welfare of his pupils is at stake, but his own reputation as well. We ask our teachers to teach, and we should encourage them in it, and hold them responsible not merely for having certain facts memorized, but for awakening thought in the children, making them more eager and ready to receive knowledge. But this great work, I repeat, cannot be well done if the teacher is made to be in any degree a slave of the text-book. I might speak of the harm which such examinations for promotion have upon the health of children in causing unnecessary anxiety and excitement. But enough has, perhaps, been said to show why examinations for promotion should not be given by the Superintendent or School Committee.

But it may be asked, How, then, shall promotions be made? Should they not be uniform? And should they not be left to the Superintendent or School Committee? A brief statement of what is done in one town will explain how promotions may be made, and the part that the Superintendent may have in making them. Two or three months before a readjustment of classes occurs, the teacher fills out and sends a statement to the parents of all pupils who are not doing well the work of the school. This statement tells the parents what part of the work is not satisfactorily done, and asks for their coöperation and advice as to whether more work can or should be exacted from the child. This is repeated, if necessary, later in the term. Two weeks before the time of promotion the average of the monthly examinations of all doubtful pupils is placed upon paper prepared for the purpose. By the side of it is placed the result of the special examinations prepared by all of the teachers of each grade. The Superintendent, with the assistance of the teacher, then passes judgment upon each case. The only question is, Is this child ready to do the subsequent work?—that is, Will it be better for him to do that work than to go over again the work he has done? The results of the uniform examination and of the regular monthly examinations are carefully compared with the report of the teacher, together with the age, capacity, habits, and future plans of the pupil, and the decision is made whether he shall be promoted unconditionally, or be placed upon trial one month, or be expected to review the work already gone over.

There are other and miscellaneous duties, of which it is not necessary to speak in detail. Every one doubtless knows them,—adjusting difficulties between parents and teachers, listening to grievances, attending to cases of discipline reported by teachers, and inspecting the school-houses and outbuildings. All these are necessary duties, and serve at least to fill up any spare time that the superintendent may have.

The question may be raised as to what part of the duties which have been outlined can be done by a Superintendent in a large system of schools. Where there are eighty or more teachers, it might be well to delegate certain duties to principals or others; where there are less than forty, the duties of supervising might be given to one who will employ a part of the time in teaching, if full-time service is thought too expensive. Or, what is much better, small systems of schools can unite and employ one competent Superintendent for the whole. The uniting of smaller towns for the purpose of superintendence is entirely practicable, and enables such towns to have the benefit of as wise supervision as the larger towns and cities have, and to have it at small expense.

There is one part of the Superintendent's work which has been somewhat neglected in the past,—that of educating public sentiment in favor of the schools; of letting the people know what he is trying to do, so as to get their support and coöperation. Public meetings should be held for the purpose of explaining methods of teaching and discipline, and for answering any questions that may be proposed. But before the community at large, the School Committee have claims in the same direction. Frequent reports should be made to them by the Superintendent of the condition and progress of the schools, and of what he is doing for their improvement. Half of the time that is now spent in committee meetings in the discussion of some trivial or personal matter may well be given to hearing from the Superintendent,—his doings, plans, and views touching any part of the school-work. Especially should they hear and heed evidence of incompetency on the part of any teacher, and his opinions regarding the remedy.

This full and explicit statement of what the duties of a School Superintendent may be is given in the hope that it will help to define those duties more clearly, and also that it will meet some of the objections against supervision. The objections to employing a Superintendent, or to continuing the office, often arise from a wrong impression of the character of the work to be done. To rightly perform his work, the Superintendent must know thoroughly the theory, the practice, and the end of teaching. He must be thoroughly in love with his profession and committed to it as a life-work. He cannot well do the work of supervision and of anything else at the same time; but his whole thought should be given to the principles and the practice of education. Those, therefore, who are superintending schools to eke out an insufficient salary earned from some other employment, or who cannot bring to the work of supervision an undivided interest in it, should stand aside. The schools have suffered too long from poor supervision as well as from no supervision. Some Superintendents have been simply doing the errands of the School Committee, or they have spent their time in issuing bulletins of directions and examination-questions from their office, and called the work supervision. True, skilled supervision, as it exists in some places, is found to be a most valuable aid to the schools in bringing out the best results. Indeed, if every one could see the difference between the education of children where it is directed by a wise leader and what passes for education in places where there is no such leader, there would be a great uprising in favor of supervision and against the waste of the public money where there is not wise direction.

Much of the criticism that is now made of our public schools is doubtless well founded. Every intelligent test that is made demonstrates the fact that subjects are taught at the wrong time and in the wrong way. In many of the schools, original thinking is not encouraged, and the powers of observation and attention are not developed as they should be. There is not found often enough that practicalness of work which is involved in a good method of study, and which implies discipline and facility as well as the acquisition of knowledge, The remedy in part for all this lies in a thorough and intelligent supervision of the schools,—a supervision which will detect faults wherever they may be and supply the needed corrective; and there is no community in this Commonwealth that can afford to be without it,—not even the smallest town. Two or more towns can, as has been suggested, unite for the purpose of superintendence. This can be done in either of two ways. The towns can vote "to form a district for the purpose of employing a Superintendent of Schools," in accordance with Section 44, Chapter 44, of the General Statutes, or they can simply vote that the School Committee be required to appoint a Superintendent. The Committee of each town can then appoint a Superintendent for so many days' service in the week. There can be no friction between the towns under such circumstances, for the Superintendent is in the service and directly under the control of one town a given number of days in the week, and no other town has his service then. In this way each town has the benefit of the service of a skilled expert one, two, or three days in the week, at a moderate expense. One day a week from such a man will be found to be worth far more than the full time of one who does not understand either his own work or that of the teacher.

Fear of "one man power" ought not to deter towns from securing this needed service. Nothing need be taken from the authority of the School Committee, for they will still retain, as they should, "the general charge and superintendence of the schools." Let not the excuse be made that the right man cannot be found. Once make the office as strong and secure as is that of the teacher and there will spring up many candidates worthy of trust and confidence. Neither let the fears of disturbance sometimes expressed by routine teachers prevent the appointment of a Superintendent. The best teachers hail with joy such a helper. They know that their work will be better understood and appreciated, that the plan of study will be better arranged, and that the teaching in all grades will be more thorough and methodical.

WHAT MORAL RESULTS SHOULD COMMON SCHOOL TRAINING GIVE?[1]

BY W. N. HAILMANN.

Morality in its widest and fullest sense is agreement with the laws of being. This is true of all phases and relations of life. It is true in the smallest concerns of individual existence, as much as in our relations to Supreme Being, to God. This view connects every virtue with every phase of our existence. None is so lowly as to exclude the highest of them. "Charity begins at home." So do faith and hope. Faith in God begins with faith in ourselves and in our nearest surroundings. In all directions we reach infinity only through its transient, finite manifestations; unity only through diversity; the one through the many.

Conscious morality in man implies insight into the laws of being. Without insight our morality is a lucky chance. Whatever adds to our insight, adds to our morality. A man who truly knows must be an unthinkable fool, if he is wicked, if he lives in opposition to the inevitable law. There is no greater moralizer than the diffusion of knowledge. It removes morality from the shaky and unworthy platform of fear and places it on the firm foundation of conviction.

I have been much shocked of late by a denial of this in the Report of the Committee on Moral Education to the National Council of Education, in which the diffusion of knowledge is adduced as "unfavorable to morals," on the ground that it "weakens the bonds of authority of all kinds, and replaces the terror felt for some unknown punishment by a moderate apprehension of some physical inconvenience; the moral command having lost its sanctity, and become a hygienic prescription." It is a sad and strange perversion of mind when five men high in the educational councils of the Nation deliberately turn their backs upon the light of heaven, and seek salvation in the realms of darkness. The man who knows, who *truly* knows, must grow in morality. Other circumstances being equal, he will be moral in proportion to his knowledge. For is not knowledge the very life-blood of morality. Men will rebel against fear, but never against knowledge. Possibly the committee had reference to that flippant dilly-dallying with knowledge which is quite common in machine schools, but this is not knowledge. Knowledge goes to the essence of things, and reacts necessarily and in proportion to its depth upon the very essence of our conscious being.

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[1] I take it that *training* here means *education*, and have answered the question in this sense

Strictly, there is but one virtue. This accounts for the confusion in the current definitions of virtues. Any virtue may be expressed in terms of another. Industry is faith in the value of our work; justice is faith in the immutability of law; reverence is faith in the divine essence of all things. Any virtue implies all the rest. Hope and charity are but manifestations of faith in different stages of action and re-action; charity and faith are the children of hope; faith and hope are the ripe fruits of charity. "Seek ye first the Kingdom of God, and all these things will be added unto you," will apply to any of these.

Let us name the one virtue *faith*, for this seems to hold the essence of virtue more fully than any other term. I do not mean blind faith. Blind faith is not moral. It needs the fertilizing power of insight to make it moral. Its first outcome are love and obedience. Faith in self, in mankind, in nature, in God,—true, genuine faith,—must yield love and obedience to self, mankind, nature, God, in proportion to its genuineness and intensity. Faith in self is self-reliance; and inasmuch as it implies insight, implies self-knowledge. Self-knowledge brings modesty and self-esteem, and grows into self-control, self-mastership, the unfailing fountain of the four cardinal virtues, — temperance, prudence, fortitude, justice. Mutual faith among fellow-men brings forth good-will, gratitude, sympathy, obedience to the call for help, liberality, magnanimity, self-sacrifice, mutual respect, and respect for law and order, and tempers justice with mercy. Faith in nature secures obedience to her laws, which implies attention to all the physical duties to self and society. Faith in God secures hope and self-devotion, or charity in its highest sense. It teaches the one-ness of all that is; it reveals the drift of being; it gives reverence, the attitude of morality, toward all things great and small; it shows man that salvation lies only in truth and goodness, and it clothes these in a transcendent beauty which fills him with a glorious enthusiasm and, at the same time, with perfect equanimity, perfect trust. It teaches man the nothingness of self in isolation, and the all-ness of self in perfect self-devotion. Who has this faith needs no other, for it includes all other faith.

On the other hand, it should be remembered, particularly by educators, that this great faith, like all things human, is a growth, and subject to the laws of growth. It comes from within. Its development is slow and from smallest beginnings. Patiently and laboriously it must climb from faith in self through all the intermediate stages; and it must do this self-actively, in full spontaneity and freedom. Woe to the teacher who fails to recognize this and who forces upon the child a formal faith in God, of which the little one cannot feel the meaning and the value!

In approaching our question we should look upon every child primarily as a young human being with all the possibilities this dignity implies. All distinctions of condition, rank, circumstance, and even heredity should vanish before this one consideration; for the *human being* can work out of all of these. If we attend to this, all else will follow. A human being in the full sense of the word will be on his feet wherever you place him. Is he a laborer, he will be faithful and frugal; is he a merchant, he will be honest and fair in his dealings; is he an artisan, he will be diligent and conscientious; is he an artist, he will be pure and reverent. He will in every calling and in every condition of life find and practice the special, most needed phases of his virtue.

Much is made of this being an age of machinery, and of the consequent need of punctuality and regularity. Put the *human* being over a machine, he will be punctual and regular. Beware, however, in his education of making him a part of the machine, instead of placing him over it as its conscious master. Beware of the *ad hoc* in education, unless, indeed, this *ad hoc* is humanity in its fullest and highest sense. A god can run even a machine; but the machines which we sometimes make in school factories are hopelessly removed by our work from becoming "perfect even as your Father in Heaven is perfect."

The question, what moral results should common school training give? we may therefore answer boldly. It should give the highest attainable result in humanity. It should make the pupil virtuous. It should give him faith, hope, charity, justice, love. It should place him into full agreement, full harmony with the laws of being. Nothing less than this will do. It should give the pupil insight, knowledge of self and surroundings. It should bring will and deed, the pupil's life into agreement with this insight. It should enable him to feel and enjoy the higher pleasures of eye and ear, — higher as compared with those of mere contact in touch and taste. It should lead him to rise from indulgence in the merely pleasurable to an appreciation of the beautiful, — from the grosser pleasures of matter to the pure enjoyment of form. It should raise him from the world of *real sensations* to the brighter realms of *ideal affections.* It should arouse enthusiasm, and, at the same time, strengthen equanimity, placing the emotions under the control of reason. It should give him moral principles and self-control, justice and benevolence, a true appreciation of the relative value of external and internal possessions, of the real and ideal.

This is the result common school training ought to give. We should be satisfied with nothing less. The common schools are the schools of the people, which in the democratic republic is sovereign. The general welfare demands that this sovereign should attain the highest attainable degree of virtue. A number of persons, consciously or unconsciously hostile to free institutions, take advantage of the double meaning of both *common* and *people*, and prate more or less vociferously about the wrong of taxing wealth for the support of "schools in which the *common people are* educated above their station." In the ideal democratic republic there *is* no *common people* in the sense in which these persons use the terms. Here the *common people* cannot be educated above its station; for *it* is sovereign. The private school or academy may place its highest aim in the pseudo-culture of decaying social groups; the technical school may confine itself to preparation for the specific needs of some particular calling; the church school may be satisfied with the narrow morality of some transient form of worship; the charitable industrial school or orphan asylum school may be proud of the surface morality it forces or coaxes upon fore-ordained menials; but the common school which is to prepare the sovereign of our land for his arduous duties, the common school upon whose labors depend the common welfare and the perpetuity of our free institutions, can be satisfied with nothing less than true, full, all-sided culture of head, heart, and hand, the broadest and deepest morality, the most profound and most intensely living faith, the highest and most generous humanity.

The answer to another question that was put to me, viz., "What moral results have been attained in common school training?" I find beyond my power. It is easy to see that in a general way much has been attained. This appears unmistakably in the tone and character of the work and in the steady upward drift of American civilization. It would be difficult, however, to show in particulars to what extent the school as such is chargeable with the successes or failures of the past century. This would require the collection of a vast amount of statistical material and extensive historical and other sociological studies, which it is impossible for me to undertake. On the other hand it is a less onerous and, perhaps, more useful enterprise to point out a few of the chief dangers and desiderata of the ethical work of the school.

The greatest danger to the educator lies in the power of fear in the external control of the weak. He is constantly tempted to wield this convenient expedient in securing external good conduct on the part of the comparatively weak young human beings under his care. He is constantly ready to use the threat of arbitrary punishment in tone of voice, look, gesture, or word. The pupil soon learns to connect the need of good conduct with safety from inconvenience under certain external circumstances, such as the presence of the master. He puts on external good conduct as a mantle whenever occasion requires and hangs it on a peg in the hall whenever he enters the sanctuary of his inner being, or when the outlook is clear. He becomes a cunning slave floundering along an uncertain surface of public-opinion, but fails to grow into the inner rectitude of the freeman who soars steadily and consciously upward on the pinions of faith. Circumstances may arise and cases may occur when the educator stands helpless. Immediate action on his part is imperative, and he sees nothing at hand but the external exercise of his superior power, nothing but fear. If he then uses it modestly and prayerfully, it is well. If he says to himself, I have recourse to this because of my ignorance and lack of skill; if his inmost self cries aloud, "Oh that I might be spared this humiliation," it is well. His prayer will be answered, and his humiliation will bring him more light. But woe to him, if he exercise his authority in pride and self-approval. He will bring misery upon his pupils, and defeat upon himself.

The motive is everything. Faith is virtue, fear is vice. Faith is life, fear is death. Faith is development, fear is repression. Faith is of God, fear is of the devil. Faith cries *Do*, fear whispers *Don't*. A school discipline that is based on faith, — faith in self, in the schoolmates, in the teacher; faith in the world, faith in God,— is for all time, and will lead youth into virtuous manhood and womanhood. A school discipline that is based on fear is for the moment, is an expedient, and will leave youth to drift or linger, as passion or circumstance may chance. We hear much of obedience as the cornerstone of morality, but it makes all the difference of good and evil *what* the child obeys. If it obeys the power of despotism, yielding all the time to external pressure, it will sink into slavery, and in due time its own whims and passions, and the temptations of surroundings will become its despots. If it obeys the force of reason and goodwill, yielding more and more to its own growing insight, it will grow into freedom, into full mastership of self and the world. We hear much of the fundamental need of rigid discipline, but it is all-important that in this the stress should be laid on the discipline and not on the rigor.

It is said in the Report of the Committee on Moral Education to which I have already referred, that the pillars on which school-education rests are *behavior* and *scholarship*. It is necessary, however, that these pillars should themselves rest on a firm foundation in the very self of the pupil, else the whole structure will tumble down, pillars and all. This foundation can be no other than virtue, morality based on insight. I can see no reason why *school*-education should be less intensely moral and ethically shallower than family education; or why the school should be satisfied with external good behavior and superficial scholarship, instead of insisting on character and intelligent, self-active love of knowledge.

The same report tells us that in securing behavior and scholarship, "habit is everything, and theory little or nothing." It would have been better to say that habit is invaluable. It is unwise to raise the appreciation of habit by lowering the appreciation of theory or instruction. Instruction is as invaluable as habit. Instruction renders the blind strength of habit seeing. Instruction kindles beacon-lights on the shores to keep habit off the reefs of unreason. It generalizes habit. It adds faith to habit, and raises it from the level of mere expediency to the dignity of virtue. Habit may make a pupil punctual, regular, obedient under certain conditions; instruction will make these qualities the necessary accidents of a thorough-going morality.

I do not wish to warn, however, against an over-estimate of habit but rather against the under-estimate and neglect of instruction. For habit is, indeed, invaluable; and the formation of good habits is the constant aim of all true education. Strictly speaking, habit is the result of instruction and practice; it is conduct become automatic.

In its broadest sense, instruction embraces the character of surroundings, the example and the word of the educator. The arrangement and management of room and furniture, the character and use of text-books, the recitations, rules and regulations, the dress and manner of the teacher, all belong to instruction; so does the teacher's example in ethical conduct. Indeed, the value of these phases of instruction is quite generally recognized. On the other hand, this is not the case with instruction by speech. Concerning this it has become almost fashionable to deride all verbal ethical instruction as worse than useless moralizing; and yet there is no greater illuminator of the way in which we should go than the Word. I am well aware that "it is not the hearers of a law who are righteous before God, but the doers of a law will be accounted righteous."

Yet it is needful that those who are not "a law unto themselves" should be hearers before they can be doers of the law.

It were strange, indeed, if the recital of beautiful stories, adapted to the learner's scope, and freighted with the example, praise, and leadership of virtue, should fail to incline him to virtue's ways; strange, indeed, if the repetition of beautiful thoughts and sentiments fresh from the hearts of the best of men, should fail to attune his heart to goodness; strange, indeed, if the earnest admonitions of a respected and beloved instructor, whose very tone of voice comes laden with faith in the learner's fundamental integrity, should fail to strengthen him in good purpose and earnest endeavor; strange, even, if a systematic presentation of duties to self, neighbor, and God, should fail to increase his fidelity to duty.

I have a firm conviction that much of the moral shallowness that seems to fill society with crime, to clog our government with corruption, and to oppress our commercial and industrial interests with a narrow, grasping egotism, is due to this unwise neglect of ethical instruction in our schools. It is due in a large measure to that cold, speculative intellectuality that looks upon each child as merely another grain to be put through the mill, as merely another *one* that has come to figure for a time in "number belonging," "average attendance," "percentage of transfer," and the like. It is due to that cold, speculative intellectuality that sacrifices all things to subjects of instruction, and judges all comers by the low standard of "behavior and scholarship."

We need, to counteract this, a revival of the heart, warmth of feeling, sympathy with each individual pupil, a deep concern in his ultimate welfare. We need teachers whose touch and look, whose voice and word bring to each pupil rich assurance of genuine, abiding interest in his well-being; whose very presence says to the child constantly, "I see and respect in you untold possibilities for good, and I love you for the good I know to be in you. This I shall find and foster with tender care, and help you grow to be the strong, self-contained, helpful man or woman, the king or queen you are meant to be." We need teachers who find it in their heads and hearts to say to their children in all the phases of their intercourse with them, "Never mind your faults now; come, let us attend to the good in you, and the faults will vanish like a dream." And we need superintendents who can appreciate such teachers, and who find it in their heads and hearts to allow them to do their God-appointed work.

I can see no reason why school-education should be less intensely moral than family education, and why the formation of character should be any less the proudest outcome of the school's work. On the other hand, I can see hosts of reasons why the school should be more stringent, more persistent, and more systematic than the family in this respect, in order to make up for the manifold inabilities of the family, coming from poverty, ignorance, and frivolity in the home. I know of no weaker and more humiliating attitude than that assumed concerning this question by a number of school-men claiming that we have no concern with these things; that such matters, as they term them with not a little contempt, belong to the family and church. They may close their eyes as vigorously as they choose to this greatest of their responsibilities; God will not relieve them of it.

It is not within the province of this article to find ways and means for the accomplishment of the indicated results. Yet experience and a thoughtful review of the field convince me that ways and means are ample. To begin with, let the atmosphere of the room in its neatness, cleanliness, and cheerfulness, in the simplicity and harmony of its adornments, in its perfect adaptations to the duties of the hour, be a constant expression of ethical tendency; let the teacher, in dress, manner, movements, bearing, and speech be a living example of self-reliance and good-will, of justice and love, of the sweetness and serenity that stream as a perpetual halo from all-sided faith. Let her avoid in look and speech all that borders on pride and a vain display of superiority; let her shun sarcasm and irony, bitter and cutting reproof, scornful and vindictive accusation, and all similar manifestations of incompetence and hate; and let her, on the other hand, be ever ready with encouragement and help for the better self that struggles for recognition and supremacy in the being of every child. Let her miss no opportunity in general and particular directions for conduct, and, in all so-called disciplinary affairs, to direct the child's attention to underlying principles of duty. Let her in teaching hold fast every opportunity to glorify virtue.

Undoubtedly, one of the most powerful special helps in ethical instruction is the morning exercise. Here the child may learn to study virtue systematically, and to love it consciously. Here its whole being may be attuned ethically for the day's work. I would warn, however, against the demoralizing practice of the perfunctory "reading of Scripture *without comment.*" I see no good reason why suitable passages of Scripture, heavy with treasures of ethical truth, should not be unlocked in explanation and illustration. It will always be found easy to avoid the shoals of sectarian controversy which rests upon dogmatic considerations that have little to do with the ethical bearings of scriptural truth.

However, the recognition of the value of ethical training in our schools would necessitate important changes in their entire organization. First of all, the ethical condition of the teacher is of the highest importance. It makes all the difference of success and failure ethically whether a teacher do her work with the warmth and enthusiasm of inner conviction, on the basis of immanent life-principles, or with the spiritless stolidity of a menial who earns a living by doing chores. Now, he is tested for fitness almost wholly on the basis of a shallow school-scholarship, to which are sometimes added superficial testimonials of good reputation and the connection with some church, neither of which is necessarily a proof of good character. Instead of this, or rather in addition to this, it would become necessary to institute searching inquiries into the nature of his life-principles. With their attention habitually directed to these things, wise men and women would not find it very difficult to arrive at safe conclusions, inasmuch as life-principles are written in clear and indelible characters in the bearing, the expression, the walk and talk, — all the little *minutiæ* of daily life. A day, or even an hour in school,—a test lesson, as the Germans have it,—when the teacher can be observed in actual intercourse with the pupils, will be more efficient in revealing the teacher's fitness, even with reference to scholarship, than the most searching written examination.

In the next place, our courses of study, as well as our methods of instruction need remodeling. They should be handled throughout with a view to the cultivation of self-reliance,—that faith in self which is at the very root of individual morality. They should offer to the learner opportunities, not for study alone, but for the application or use, for the control or mastership of the things learned. This makes it necessary to adapt the course of study more to the requirements of the pupil than to those of the subject of instruction. Now we are in the habit of dishing out to the child certain portions of subjects, and to make him turn them over and swallow them in a given time, not caring for his appetite nor for their ultimate fate. Instead of this we shall have to give him the whole subjects, and let him test his powers upon them in all directions, and use them for purposes which he can appreciate.

Thus, in Arithmetic, we are apt to give the child a certain fragment of the subject, say addition, and to drill him on this so that, as we say, he may understand it thoroughly. The work is, intrinsically, without interest to him, and he goes through with it only inasmuch as he is driven or coaxed. Instead of this, we must learn to give the child the whole subject, and help him test his powers upon it in all directions, permitting him to handle the numbers he can grasp in all needed ways, in division, part-taking, and multiplication, in subtraction and addition, and connecting these things with the learner's own life, constantly making them useful to him in his daily work, — or daily play, which in earlier years is his daily work.

Such work will secure for the child a more or less vivid sense of power, without which genuine interest on his part is impossible. Whenever the child has this sense of power, of mastership, he grows and feels the joy of growth. Hence the chief business of the school, particularly in the earlier stages of its work, is to see to it that this growth be properly sustained in the right directions. The traditional dislike of children for the school is chargeable to the neglect of this duty. Everything in the school is so new and strange to the children; nothing sympathizes with their own hopes and aspirations; nothing fits their purposes. They feel helpless and weak; and, even after they have learned to submit to a duty, which they neither understand nor appreciate, and have begun to make its fulfillment a temporary purpose of their own, they are always glad when the time comes to go forth from these to purposes that lie nearer their wants and needs, and, consequently, nearer their hearts. There is no better proof for this than a true kindergarten, — not a schoolish affair in which they substitute certain games and manual occupations for the three R's, nor a sentimentality-shop where all strong things except self-conceit are whined and fondled out of the children, — but a genuine kindergarten that has caught the spirit of its founder. Here the child finds new things daily, it is true, but they adapt themselves readily to his wants and purposes, and invite his control. Here he finds new friends, too, but all,—especially the kindergartner,—sympathize perfectly with his hopes and aspirations, and strive to increase his happiness by increasing his mastership. It is a significant fact, too, that although not engaged with any special subjects of instruction, the children learn much,—nay, much more than older children were wont to learn in primary schools,—of number, form, drawing, singing, rudimentary natural history in its wider sense, geography, language, and, in many cases, even of reading and writing. A still more significant fact for the question under consideration is that the children visibly gain in virtue; that their faith in self, in playmates, in teachers, in mankind, in nature, is making steady strides toward an enlightened faith in God.

Unquestionably the social features of the kindergarten help much in bringing about these delightful results. The isolation of the pupils, which is deemed so essential in the schools of the day, proves an insurmountable barrier to the evolution of higher forms of faith. The child is persistently held back at the stage of self-faith which, clipped by the relentless school-shears at every bud that would stretch out into the balmy atmosphere of altruism, degenerates into some more or less barren form of egotism, for which humanity and godliness are equally unattainable. Fortunately the family and society provide means by which this demoralizing tendency of isolation is somewhat counteracted, and which open, to some extent, the avenues of brotherly love. There is no question that, in much of its work, the school needs more or less complete isolation of the pupils; but this isolation should be sanctified in the pupil's mind by higher social aims, for whose sake he submits consciously and cheerfully to the isolation. There should be constant opportunities for the exercise of mutual sympathy, of devotion to common interests, of self-denial, of self-sacrifice, of brotherly love in all its manifold manifestations; for these alone can lead to the high ideals and aspirations that center in the name of God.

It is not an uncommon thing among teachers to point with pride to our schools as the hope of our country, and there is certainly no other feature of public life which in its possibilities can approximate the claims of the schools to this proud distinction. Yet, if we look at the comparatively small effect which the rapid growth of the schools during the last decades has had upon the moral status of the people, it behooves us as teachers, conscientiously and modestly, to determine to what extent our work is responsible for this deficiency, to what extent the status of our work justifies our hope. Whatever may be the beneficial effects of literary and other studies upon the development of character, in their present form they seem to be inadequate to counteract the evil effects of other factors, or of the failure to make character-culture the center of the common-school work. In the selection of teachers, in the arrangement of courses of study, in determining upon methods of instruction, in all matters that pertain to the work of the school, the chief questions will have to be, "What is the ethical bearing?" "To what extent will they help in the formation of character, in the establishment of virtue?" Not before this shall be done can we look upon our schools as the embodiment of that education which is the hope of our country, as it is of all humanity. If our schools cannot check the revelries of crime and corruption that disgrace our institutions, our pride is a vain boast.

It will not do for the school to hide itself behind other educational factors, and to cry out, "I do my duty; *they* are to blame." The prophet, filled with the spirit of his divine mission, not heeding his weakness, his personal insignificance, goes forth into the land to lead countless numbers of his brethren,—nay, all mankind, to the Father.

He does not say, "There are others whose duty is to prophecy, let them take their share of the burden"; but he meekly, cheerfully carries it all. Thus the school must arouse itself to a consciousness of its divine mission, and, with a single eye to the duties of this mission, must go forth and enlist all other educational factors in its holy work. Holding aloft the banner of faith, it must, by the might of its enthusiasm, compel the following of all who come within its influence. Then, indeed, will the school be not only the *hope*, but the *salvation* of our country, of mankind.

CO-EDUCATION.

BY H. S. TARBELL.

Whether women are the mental equals of men, whether their minds are the same as those of men, seem to be unnecessary questions in deciding to what education they are entitled, or whether they should be educated by the same teachers and by the pursuit of the same studies.

Is the work which men do in gaining an education, as good work for the mental development of women as can be devised? — can they undertake it under the same conditions that men do, with good prospects of advantage?—seem to be more suitable points for consideration when deciding for or against co-education.

In man or woman brain-power results from physical and mental culture. Study gives tone to brain, and thereby power to frame. The laws of mental growth and brain action are the same for both sexes. The object of education, — strength and facility of mental action,—is the same for both sexes. It was once fashionable among would-be philosophers to draw out in extended lists the mental differences between the sexes, to claim that woman is more observing than man. In her the presentative and representative powers are more active, while the reflective are less prominent. Her mental processes are more rapid and more intuitive. She has greater fondness for detail, more patience than men; but less power to reason, less solidity of judgment; more taste, more feeling, more vivacity, more sentiment; less leadership and power of control, less plan and logic.

Though these differences be conceded to exist in good degree, yet it will be found that the mental differences of men and women are quite as much the result of their manner of life, and especially of their education, as of any necessary and inherent differences of mental constitutions. The more one has studied the minds of women in their action, under the same circumstances of training as men have enjoyed, the more masculine have appeared their minds, or rather the more human appear all mental powers and actions. If there be any inherent mental differences between the sexes which it is desirable to retain, it is making an easy matter of a very profound change if the pursuit of studies in common shall eradicate this difference.

If the difference be so slight or so precarious that a few years of school-life can efface it, it is too slight to govern the character of that school-life.

There may be important mental differences lying in the region of the sensibilities, but the intellect and the will are sexless. The intellectual differences between men whom we see no difficulty in subjecting to the same mental training, are greater than the average differences between men and women. Boston University, Harvard in its "Annex," Cornell, Michigan University, and the one hundred and fifty other colleges which receive women to their courses on the same terms as men, do not recognize any intellectual sexhood requiring special adaptation of work or studies.

Schools for general culture are designed for the development of the individual to secure mental growth and power, facility and justness of mental action. We find in the intellectual capabilities necessary to enable either sex to gain the advantages of such schools no differences. Such specialties as divide our professional schools from the schools for general culture will be found fit or unfit for the training of the feminine mind, according to the uses to which, in a business or professional way, that mind is to be put, just as would be the case were a masculine mind considered. The whole field of literary and scientific culture lies equally open to either. With equal intellectual power, an equal right to the highest training of these powers is freely conceded.

Our social and educational customs, until within a decade of years, have implied variation between men and women in mentality and woman's inferiority. What, now, to the woman conscious of her powers and ambitious to test them, is fair play but admission to the best chances allowed to men? The schools for the education of girls only are not supposed to be, as a rule, equal in thoroughness to those to which boys are admitted, and equal education in a wide sense can only mean co-education. Whether the education given in our colleges be the best for men or for women that can be devised is not important in this connection, but if it seems equally attainable by either, and as well adapted to nourish the feminine intellect as the masculine, why should not the women eat at these tables?

Co-education is at present a necessity for those young ladies who desire to be accredited with thorough scholarship. A diploma from Michigan University is of much more value to a young lady than one from any of the colleges for women. Without doubt unjustly, but in unfortunate fact, the character of the education obtained in female seminaries will for years to come throw a suspicion of shallowness over the reputation of all scholars who can bring no other evidences of scholarship than the diplomas of similar institutions. The desire to know our relative position, to become rated as a definite quantity, to have the stamp of the mint placed upon our intellectual gold-dust, lies at the root of much toil for collegiate degrees, and supports us through many wearisome examinations. It is this feeling, in part, which supports the Chautauqua courses and the collegiate examinations for women in this country, and still more largely in England.

A full test can be made only by co-education. In my acquaintance with young ladies I have not of late years met (not saying this is true in all cases) one ambitious, capable lady who was willing to take a course in a female college. I know many of them have taken Greek and the higher mathematics just to show that they could compete with the young men in these supposed very difficult studies. These examinations have established beyond controversy the ability and readiness of women to compete with men in any line of scholastic effort. If there be any intellectual inferiority in women, it must be sought elsewhere than in the class-room or the examination-hall.

A young lady educated by herself, or in a girl's school, has no just standard of self-measurement. She meets young men who praise her scholarship and beauty, pay a condescending homage to her intellect, and delight in her vivacious repartees. She sees that others look upon her as nothing in herself but an interesting companion for a leisure hour, and listen with a pleased astonishment to her profound remarks as one regards the wise saying of a forward child. Co-education affords the desired standard, and gives her just such place. That a woman has a more slender physique than a man, and would be less able than he to do the work of the forge or the farm, by no means proves that she can do less than he in the school-room or in any of the varied ranges of mental activity.

The opponents of co-education claim that either the health of the young ladies must be broken down by the unremitting toil of a college course, or the standard of college education lowered to her feebler capacity. Were this true, then further discussion would be useless. Woman would be irrevocably condemned to an intellectual inferiority corresponding to her physical stature. But the facts of many years do not seem to corroborate this. Those who have watched her work for a series of years side, by side with young men, almost invariably say that she has maintained an equal scholastic rank, and usually with as little interruption from ill-health and with an increasing physical strength.

Nature has made provision for the girl to do more work during the first twenty years of her life than the boy, because during the next twenty she will not have the same opportunity for personal improvement. But the objections to co-education are not only "because of the special strain which continous college studies are supposed to lay on the delicate physique of woman, but also because of the special dangers to female modesty and reserve supposed to arise from the continuous association of men-students and women-students in the same class-room."

Where the college does not attempt to control the study-hours or the conduct of pupils outside the college class-rooms, but they are remanded to the care of parents and friends and to the control of society, the influences can hardly be injurious. Young men and young women are better morally, socially, intellectually, for association in the school-room. When the inspiration of study possesses the student, he or she is not likely to be harassed by the presence of the other sex. A common interest leads to intelligent association on an intellectual plane. This tension of sex, which is certainly to be avoided, is quite as likely to exist in unwelcome forms in the separate school.

A lady, who, after studying several years in schools for both sexes in this country, went to France for further study, writes of the girls' schools in that country:

> "Occasional visits from friends or a surreptitiously read novel give them an idea of the outer world, and imagination fills up the gaps. These girls in the schools become dreamers. They dream of life and its duties and privileges, and their dreams are morbid and unreal as those from fever." "Co-education is looked upon with horror by parents, and a mingling of curiosity and astonishment by the school-girls. The announcement that I had gone to school with boys all my life created immense excitement behind the high walls of my French boarding-school. At first I was looked upon with something the same feeling as that aroused by Dr. Mary Walker in her masculine attire in the streets of New York. I was the theme of the hour, and was shunned as a social outcast for a whole day. Curiosity finally got the best of my schoolmates. They crowded around me, and plied me with questions. If I chanced to say I thought education with boys was the best and most sensible way, there was the greatest merriment. My favorite teacher, a woman twenty-five years of age, asked me, with a book over her face and crimson to the temples, if I did not find it very difficult to study under such circumstances, adding, with a nervous laugh, that she just knew she could not study, for she would be looking at the boys all the time. It is with such morbid and unhealthy views of human life and its relations that the French girl is still educated."

It is in Catholic countries, where celibacy is a condition of the priesthood and the educational institutions are managed chiefly by brotherhoods and sisterhoods, that separate schools for the sexes most exclusively prevail. But the spirit of the age seems to be reaching these lands. The Minister of Education in the Argentine Republic has recently decreed that all schools hereafter established shall be for both sexes, and those now established shall become such as fast as circumstances will permit.

The great social element is that of sex. The respect either sex has for the other is the measure of its purity. Those who meet in the class-room in the study of great subjects are elevated by the circumstances in which they meet to a higher plane of intercourse. The mental differences of the sexes are reasons for co-education. One studies to obtain some good quality which he has not. Both sexes are benefited by taking on the qualities of the other. The boys, the gentleness, carefulness, kindness, and patience of the girls; the girls, the energy, the courage, the broad generalizations, the logical judgment, the wider views that characterize the boys.

As Mr. Buckle eloquently says in an article in *Fraser's Magazine*, April, 1858:

> "The habits of thought peculiar to one sex act upon and improve the habits of thought peculiar to the other sex. Unconsciously, and from a very early period, there is established an intimate and endearing connection between the deductive mind of the mother and the inductive mind of the son. The understanding of the boy, softened and yet elevated by the imagination of his mother, is saved from that degeneracy to which the mere understanding always inclines; and the different properties and functions of the mind are more harmoniously developed than would otherwise be practicable. Thus it is that, by the mere play of the affections, the finished man is ripened and completed. Thus it is that the most touching and most sacred form of human love, the purest, the highest, and the holiest compact of which our human nature is capable, becomes an engine for the advancement of knowledge and the discovery of truth. In after-life, other relations often arise by which the same process is continued. And, notwithstanding a few exceptions, we do undoubtedly find that the most truly eminent men have had not only their affections, but also their intellect greatly influenced by women. Therefore it is that those who are most anxious that the boundaries of knowledge should be enlarged, ought to be most eager that the influence of women should be increased, in order that every resource of the human mind may be at once and quickly brought into play."

As an education to a trade or a profession, before a good general basis has been provided, narrows as it specializes, so education of men as men and women as women by women among women, if it comes before the broad recognition of humanity, narrows the mental life and weakens its vigor. Girls educated in schools for their own sex exclusively will usually be found to lack solid, thorough training in what are called thought-studies,—mathematics, classics, logic, and mental science. At the same time it is probable they will have acquired superficial habits in the study of the lighter branches. They will lack both accuracy and depth.

Co-education gives young ladies a wider and truer view of life than would their separate schools. Young men are in training for a diversity of pursuits. The whole future state is represented potentially in a boy's school. Girls are educated for a common career. All are being trained to shine in society, to win the admiration of men, to manage a house and instruct their children, if indeed their thoughts reach so far. Through the church they reach the great idea of modern growth, the value of the individual, but otherwise find only a relative or reflected importance.

Our general education is largely for the sake of the home. To render this prosperous and happy is a great end of culture. This is best secured through the mutual respect, confidence, and aid of its members. The best men and best women, knowing each other best, respecting each other most, make the best homes. An affection, which is the ripening of a pure friendship, and is supported by a mutual confidence and respect born of generous competition and thorough acquaintance, would seem the best foundation for a happy, prosperous home.

In view of the demand now made for leadership by the advocates of woman's progress to equality of rights, duties, and opportunities with men, it seems of special importance that our young ladies should secure mental breadth, the candor and far-sightedness which a broad and liberal education can afford. They will best appreciate the advantages of this equality, and the difficulties and losses in securing it, if by years of daily test they measure their intellectual powers with those young men who are likewise to be the leaders of social, business, and political movements in their generation. The occupations of home are likely to be of a varied and, in a considerable degree, of a trivial nature. Therefore, the mind of the young woman should be trained to find in solitude an opportunity for lofty thought, and in the busy idleness of trivial occupation an informing purpose and harmony of plan that puts the beauty of thought into the variety of common-place duties.

The presence of women throws a refining influence around men, improving their manners and giving an ideal element to their thought. A higher standard of purity and gentleness lifts them toward itself. There is a quickening influence on the minds of young men from association with the magnetic, imaginative minds of young ladies. Firing the intellect through the kindling sensibilities is the best way to find its heat and power. This gives spontaneity and the brilliancy we call genius. The combined vision of the two senses gives a binocular insight that far surpasses the one-eyed vision of either. But while we may, according to our predilections and surroundings, argue for or against the co-education of the sexes, it will be the results of experience which will mold the public thought.

President Seelye of Smith's College writes to Prof. John Tetlow:

"It is a common experience that young ladies are greatly improved by the regularity of life and the freedom from undue mental excitement. I am now entirely convinced that women can pursue a course of liberal education not only without physical injury, but with increasing health and strength."

President Angell of Michigan University says:

"Women have been received here as students since 1870. We usually have from 180 to 200 in the various departments of the University. The result of our observation and experience thus far is this: If women are in good health when they come here, and take reasonably good care of themselves while here; if they do not attempt, while pursuing their studies, to go too much into society, their health does not suffer. On the contrary, the regularity and pleasant activity of student-life seem to be conducive to health. Not a few of the young women who were not very strong when they came here graduated in firm health. I know of no facts to indicate that in subsequent life the women who have studied here have suffered from the ill effects of their work in the University."

I copy from a letter by President White of Cornell to some unknown correspondent:

"As to your first question, we think the chances for good health are decidedly in favor of young ladies taking an advanced course of study, especially when, as is here the case, great pains are taken to have them realize the importance of maintaining a thoroughly good physical condition, and of learning the best ways of preserving it. I have long been persuaded that much of the ill-health of women in America arises from *aimlessness*, which, under a better system of education, would be done away with. . . .

"As to your second question, so far as I can learn, the lady graduates of this institution compare very favorably with the rest of womankind as regards health. . . . The question has sometimes been asked whether young women can keep up with young men without too great sacrifice of health?

To that I may answer, that the statistics preserved by our Faculty Committee on Excuses for Absences show that, while seventy per cent. of the young men asked for excuses last year, only 38 per cent. of the young women applied, which would seem to indicate that the young women will find no trouble in putting as much time into study as the young men. . . .

"To sum up: I think that if reasonable care is taken, young women can pursue advanced studies as safely as men, and that the increased thoughtfulness thus given is likely to prove a safeguard in the preservation of health as in other things.

"Very respectfully yours,
"ANDREW D. WHITE."

When the experiment of co-education was first extensively tried in this country, the first point gained by the ladies was the gallant concession of their equal capacity with men for the tasks of the student, coupled with the regret that their physical endurance was so much less. Of late confidence in this also is finding lodgment in the public mind, and we now have abundant testimony to the hygienic advantages of regular study for women; but the fear now is that the truly feminine characteristics of her mind may receive some harm from the development of the qualities more truly masculine. Yet our deepest thinkers have long ago announced "there is no sex in mind," and as educated women show their ability to adorn social and domestic life, we may expect this barrier to co-education to disappear also.

The growth of American sentiment in favor of co-education is one of the marvels of this generation. Separate schools for girls and boys are usual in the larger cities of the Eastern States, while in the West co-education is the nearly universal rule. In 1867 there were 22 colleges in the United States, giving instruction to both sexes; in 1873, 97; and in 1880, 154.

The questions, What variation from the usual courses for men shall be made for feminine needs and characteristics? and Shall women obtain this education in separate or mixed schools? are the only important ones in this connection; and to me it seems the answer will finally be that to woman, as to man, will be left a large discretion as to the course desired; that for general growth and culture of mental power, like measures for each will be employed; that for the same special labors, like preparations will be made; that only when a woman's purposes and powers are known, can she be well advised as to the course of study to be followed, and, these being known, wisdom will consider these elements, and not the sex of the student, when the advice is given.

NORMAL SCHOOLS.

REPORT OF COMMITTEE TO THE NATIONAL COUNCIL OF EDUCATION

The subject assigned to the Committee on Normal Schools is, "Academic and Professional Instruction in Normal Schools." In the consideration of this subject the Committee have endeavored to answer the following questions:

I. What is Academic Instruction?

II. What is Professional Instruction?

III. What amount of academic knowledge should be required of candidates for admission to Normal Schools?

IV. Is it desirable and practicable to establish a uniform standard of admission to Normal Schools?

V. To what extent should the time of the Normal School be devoted to obtaining a knowledge of subjects, as compared with the time given to the consideration of the principles and methods of teaching those subjects?

VI. On what principles should professional instruction in Normal Schools be based?

A full discussion of these questions would occupy much more space than can properly be assigned to this report. The most that can be done is to state briefly the opinions of the Committee.

QUESTION I. *What is Academic Instruction?*

The term is thus defined by members of the Committee:

1. It is that instruction the object of which is the communication of knowledge merely, with the resulting intellectual discipline.

2. It is that instruction whose object is to impart a knowledge of the different branches of study. It embraces instruction in the arts and sciences.

3. It is that knowledge which is of equal value in all callings.

4. It is that kind of teaching which is designed to aid the student in the general development of his faculties, in the formation of his character, and in the acquisition of a knowledge of the several branches of literature and science. It seeks, or should seek, to give him the best possible command of all his powers, physical, intellectual, and moral. It is that instruction which should precede the preparation for all special callings and pursuits.

It will be seen that the last of these definitions includes all the others and something more. In addition to intellectual training, it justly embraces moral and physical culture, as an important part of the work of all schools that precede the professional school.

QUESTION II. *What is Professional Instruction?*

1. It is instruction in the history, the principles, and the methods of education, as branches of study pursued by themselves, or in connection with the academic instruction in the various branches of study as illustrated by or inferred from these.

2. It is that which has special reference to the methods of teaching the different arts and sciences. It embraces at least three things: (1) A knowledge of the method of developing and training the different powers of man; (2) a knowledge of the methods of teaching the different branches of knowledge; (3) a knowledge of the methods of organizing and managing a school. It includes instruction in the principles and various methods, and, also, in the practice of them; that is, in both the science and art of teaching. Besides these three departments, which are essential, there may be a course in the history of education, the school-laws of the pupil's State, and the school-laws of other States.

3. Professional instruction is that kind of teaching whose office is to aid in the preparation of the student for his special sphere, calling, or profession in life. In normal schools it implies that body of educational knowledge, doctrine, and principles which the study and experience of the past have accumulated and formulated. Superadded to the studies, lectures, etc., essential to impart this knowledge, there must be the training and practice necessary to test the aptitude of the teacher, and develop skill in the practical work of the schoolroom.

4. Professional instruction includes two species of work: (1) Pedagogics, — a knowledge of the mental, physical, and moral constitution of the child, principles of education, principles of instruction, practice in teaching, and history of education; (2) a more extensive knowledge of the subjects in which the teacher is to impart instruction.

QUESTION III. *What amount of academic knowledge should be required of candidates for admission?*

QUESTION IV. *Is it desirable and practicable to establish a uniform standard of admission to Normal Schools?*

These two questions are so closely related that they may be considered as one.

The Committee agree in the opinion that no fixed rule can be laid down in regard to the amount of academic knowledge to be demanded of candidates for admission to normal schools. The conditions of education in different States, and, in some cases, in different parts of the same State, are widely diverse. In some States free schools have been long in existence, and all the children have had an opportgnity to obtain a fair education; in others, free schools are of comparatively recent origin, and general education is relatively poor. In some States free high-schools exist in large numbers, and are accessible to all, or nearly all, the children; whereas, in others, but few, if any, such schools have been established, and the children generally obtain no school education beyond that afforded by the common school.

The normal school must use the best material it can obtain. In a highly educated community it can fix a high standard of admission; in one poorly educated it must adapt its demands to the prevailing condition of education. To raise the common school to a higher plane, the normal school must keep within reaching distance, always with the steady purpose of advancing its requirements as rapidly as it can improve the condition of the common schools.

The minimum of requirements for admission should be such a knowledge of the usual common school branches as can be generally obtained in the schools of the State, or the part of the State, for whose benefit the normal school has been established. Where only common schools exist, a knowledge of only the common studies should be demanded; but in communities where high schools abound a much higher demand may justly be made.

QUESTION V. *To what extent should the time of the Normal School be devoted to obtaining a knowledge of the subjects taught, as compared with the time given to the consideration of the principles and methods of teaching those subjects?*

The answer to this question cannot be the same for all normal schools. The standards of admission have an important bearing upon the amount of strictly professional work that can be done; and, as the standards necessarily vary, so must the amount of professional study vary. Each school must use to the highest possible advantage the conditions in which it is placed.

The teacher must know that which he is to teach, and if he is deficient in essential knowledge, professional study must, in a measure, give way to academic. Yet, even in the study of subjects that may be deemed to belong to academic work, the attention of pupils should from first to last be called to the methods by which the subjects are taught and to the principles on which those methods are based. Thus, from the outset, professional instruction is intermingled with the acquisition of a knowledge of subjects, and the professional element is made to enter into all the work of the normal school.

But in addition to this there must be a large amount of purely professional study,—a study of the human mind in its various modes of action, and of the laws which govern it; a study of psychological principles as applicable to methods of teaching; a study of school-organization and school-management; and a study of the origin and growth of systems of education.

Wherever circumstances permit, the normal course should include one year, at least, of the study of pedagogics, pure and simple. As the condition of education in a community improves, the standard for admission to the normal school should be continually raised, and more and more of purely professional work should be done, until the school becomes in name and in fact, and in the broadest sense of the term, a professional school.

QUESTION VI. *On what principles should professional instruction be based?*

An easy answer is: On the nature of man as a spiritual and physical being. We need as a basis for all teaching, and for all teaching how to teach, a much more definite and accurate knowledge than we now possess of mental, moral, and physical growth; of the way a child becomes a man. To the acquisition and extension of such knowledge, by careful observation and critical analysis, the best energies of normal educators should be carefully devoted. The knowledge already possessed, though confessedly imperfect, must serve as the basis on which present plans for normal work must rest. On this basis the work may be concisely outlined as follows:

1. It presupposes ordinary school education and culture.

2. It includes a thorough review of grammar-school studies in connection with methods of teaching them.

3. The sciences which treat of mental and physical laws,—that is, the elements of psychology, physiology, and hygiene.

3. Pedagogics; embracing,—

(*a*) Principles of Education, as relating to the body, the intellect, the feelings, and the will.

(*b*) Principles of Instruction.

(*c*) Art of School Management.

(*d*) History of Education.

In general, the practical, applied professional work, the empirical training in the sciences, should come first; the philosophy of education and practice in teaching, last.

The Committee recommend the following general statements:

1. That the amount of academic knowledge to be required of candidates for admission to normal schools must largely depend upon the condition of education in the communities in which those schools are established.

2. That a uniform standard for admission to normal schools is impracticable.

3. That the main work of normal schools should be professional; the academic work, mainly incidental and illustrative.

4. That the professional instruction should be based on a thorough study of man as a physical, intellectual, and moral being.

D. B. HAGAR,
F. L. SOLDAN,
M. S. COOPER,
E. C. HEWETT,
Committee on Normal Schools.

FOREIGN NOTES.

GREAT BRITAIN.—Several important reports, touching different educational interests, have recently been submitted by special commissions. From the report of the Commission upon certified reformatories, industrial schools, etc., it appears that there has been no large increase in the number of inmates of the reformatories since 1864, but the number in the industrial schools has increased ten-fold. The Commission recommend that the educational work of the schools be brought under the supervision of the Education Department. It is estimated that in future each child in land schools will cost *7s. 6d*, per week, and on board training-ships *8s. 6d.*

From a report presented at a recent conference of members of Boards of Guardians, it appears that of 44,000 pauper children of school age in England and Wales, not more than 13,000 are educated in the workhouse. The others are boarded out, or sent to ordinary schools, or placed in schools belonging to the Union, but separate from the workhouse. Whatever plan is adopted, the results are found to depend entirely upon the supervision maintained.

The long-expected report of the Indian Education Commission has been published. As a result of the prolonged investigation, it is declared that a large extension of primary education throughout India is practicable and desirable. It is recommended that assistance be extended to all indigenous schools "that serve any purpose of secular education whatever."

Technical Education.—The demand and the provision for technical education in Great Britain steadily increases. Finsbury Technical College has attracted 700 pupils, 100 attend the South London Technical Art School. The Central Institution at South Kensington is rapidly approaching completion. The sum of £75,000 has been already spent on the building, and the Council has asked the city for £20,000 more, with every prospect of a favorable response. In November last more than 6,000 students were receiving instruction in different branches of technology, with a view to the examinations of the Institute.

Finances of the London School Board.—The report of the Finance Committee of the London School Board gives as the estimate for the year ending March 25, 1885, the sum of £950,804 *5s.*, an increaseof £149,593 *16s. 2d.*; about 19 per cent. The change in the method of paying teachers' salaries accounts for £60,000 of the increase. Hereafter all teachers are to be paid fixed salaries, with a yearly increase upon good reports until the maximum of the particular grade is reached. The majority of the schools fall in grades three and four, with salaries ranging from £250 to £350. The average salaries for the majority of teachers under the Board will be £300.

SCOTLAND.—The number of pupils matriculated at Edinburgh University during 1883 was 3,396, distributed as follows: Faculty of Arts 1,017, Divinity 109, Law 502, and Medicine 1,781. The proportion of students on the register who took degrees was: In the Faculty of Arts (including science) 1 in 10, in the Faculty of Divinity 1 in 12, Law 1 in 63, Medicine 1 in 8. During the year £11,500 were added to the permanent endowment funds, of which £10,000 were bequeathed by Miss Dick, of Edinburgh, for the purpose of providing a professorship of Comparative Anatomy or of Surgical Anatomy, as the trustees may prefer. The several departments in the University new building are now occupied. They comprise all the classes in the medical curriculum, excepting those of Botany and of Natural history.

FRANCE.—The experiment of gratuitous, compulsory primary education in France continues to excite the deepest interest. In the discussion of the Education Budget for 1884, in the Chamber of Deputies, a member opposed to the Minister charged great extravagance in building, with the design of rousing popular enthusiasm and exciting the imagination of the common people by the splendor of the provision made for their children. It was stated that between 1878 and 1881 the expenditure for buildings erected or appropriated as school-houses amounted to 202,719,412 francs (upward of $38,500,000), and if the sums required for buildings which it had been decided to construct or adapt were added, it would give a total expense of about nine hundred million francs ($171,000,000). This policy, the speaker declared, was forcing fine buildings upon districts in which it was impossible to maintain schools.

Teachers' Salaries.—In a recent article, Paul Bert has called attention to the pecuniary inducements offered to teachers in the public service. There are, he says, 48,043 (20,658 masters and 27,385 mistresses) whose annual salary is less than 1,000 francs ($190); 22,352 have from 1,000 to 1,300 francs; 5,969 from 1,301 to 1,600 francs; 2,260 from 1,601 to 1,900 francs; 1,364 from 1,901 to 2,200 francs; 786 from 2,201 to 2,600 francs; 579 alone (484 masters and 95 mistresses) receive more than 2,600 francs.

The question of salaries has recently excited much attention throughout Europe. M. E. de Laveleye has estimated the salaries for several countries. In England he finds the average $484, in Scotland $325, in Denmark $400 to $650, but in Jutland not more than $218. In Alsace-Lorraine there has always been a fixed sum ranging from $242 to $310.

SWEDEN.—In Sweden manual instruction is made in reality a part of the system of popular education. In a great number of the normal schools also this instruction is regularly given. A report recently presented to the Belgian Minister of Public Instruction, by H. N. van Kalken, professor in the Normal School of Brussels, contains the following account of the Normal School at Sandscrona: The school is so organized that manual training is given at the same time as instruction in the other branches. Nearly four hundred and twenty-five boys are engaged daily from five to six hours, of which two hours are spent in manual work. The aim is chiefly to enable the pupil to make simple objects of utility, but some scope is also given to the inventive faculties. An interesting account is given, in the same report, of the school at Nääs conducted in accordance with the views of Salomon, who held that work in wood forms in general the best alternative to the studies which entail bodily inactivity.

Teachers are instructed here upon such favorable terms that they are attracted from all the surrounding countries.

ITALY.—The latest departmental reports issued from the Italian statistical office give a summary of affairs down to the close of 1881, which year completes the second decade from the commencement of the official unification of the kingdom, and the first decade since the absorption of the Papal States and the transfer of the capital to Rome. The progress in education is marked, though the Minister of Instruction is still obliged to report 48 per cent. of the population as illiterate; this is, however, an improvement over 1879, when the proportion was 59 per cent. There is now a Government primary school in nearly every commune, and the attendance is set down at over 2,000,000. The attendance upon higher schools exceeds 36,000. The pupils in the newly-founded art and technical schools, of which there is one in every town of importance, are registered at more than 19,000, and the students in the 26 universities at 12,700. The proportion of students passing creditable examinations is given as above 91 per cent. The number of readers in the public libraries in 1881 was 778,219, and the classified list of books which they consulted reveals a marked preference for scientific studies.

PRUSSIA.—Official statistics represent the total number of children of school age in the kingdom as 5,500,000, of which number 4,800,000 are in the primary schools. On an average there is one teacher for 78 scholars. The province the most favored in this respect is Schleswig, where there is a teacher for 57 scholars, and that least favored is Posen, where there is one teacher for 108 scholars. From 1820 to 1882 the annual expenditure for common schools increased from 7,000,000 to 53,000,000 marks; between 1873 and 1882 the State expended 115,500,000 marks for new buildings, 4,000,000 for pensioning teachers, and 2,000,000 for the use of elementary schools. (A mark = 23.8 cents.)

The Prussian Minister of Instruction, in a circular dated April 10, 1883, called attention to an association which has existed in Munich since 1881, called the Knabenhort. The object of the association is to take charge of poor boys of school age in extra school hours, and occupy them in such a way as to develop their intelligence and sensibilities, and prevent them from running wild. The society is economically managed, and although the subscription-fee is but 25 cents, in two years 100 boys have been cared for. The circular has had the effect of exciting similar efforts elsewhere.

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Lucretia R. Garfield

MAY 23 1884

EDUCATION.

No. V.—May, 1884.

THE GROWTH OF THE ENGLISH AND AMERICAN EDUCATIONAL IDEALS.[1]

BY E. F. M. MACCARTHY,
Head Master, King Edward's School, Birmingham, England.

The social conditions under which people lived in the early part of the Middle Ages were such that, except for those intended for ecclesiastical office of one grade or another, education was not only far from being a necessity, but was in fact altogether a superfluity.

Now and then, perhaps, in the castle of king or noble, some scion of the great house might be found with physical powers lower, and mental powers higher, than the average, to whom the boisterous and unintellectual pastimes of those days were in every way uncongenial, and who sought to render the eternal leisure less irksome to himself by devotion to poetry or the fine arts under the guidance of the domestic chaplain. Beyond this there was no call for, or felt need

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[1] In an article in the *Nineteenth Century* for August, 1882, entitled "Some Impressions of the United States," Mr. Freeman tells us that he was more impressed than many other British travelers in America by the essential likeness between the English and American people. "My whole line of thought and study," says the historian, "leads me to think more of the everlasting ties of blood and speech between the two nations and less of the accidental separation wrought by political and geographical causes." He is strong in insisting that "American matters cannot be thoroughly understood without constant reference to English matters," and that "the present state of things in America implies the past history of America, and the past history of America implies the past history of England." Now, that which Mr. Freeman thus sees so clearly from his broader outlook to be true of American history generally, appears to me, whose line of thought and study has been the narrower one of education, to be strikingly true of American educational history.

This may seem startling to those who have been accustomed to look upon the "common of, the knowledge that comes from books. Reading was an unknown art. The simple business transactions of those times called for no arithmetic beyond that which the notched-stick or the tally could record; and as for writing, in days when there was next to no correspondence, the rare cases where attestation to a legal document was required were met by impressing the private seal, or with humbler folk, the eye-tooth, upon a lump of wax attached to it. And indeed of books in our sense of the word,—of books, that is, which store up and hand on the accumulated common sense of the preceding ages, which present to us the noble flights of imagination, the shrewd guesses at the problems of the material and spiritual world,—legacies from the ancient civilizations of Greek and Rome; of these there were none, or next to none, accessible. The learning of the times was confined to matters of dogmatic faith, and the craving of the thoughtful mind for inquiry could only be satisfied by delving in the restricted area of theological speculation.

He would be, indeed, ungrateful who failed to recognize the energy, self-denial, and devotion with which, in the days of their living faith, the clergy of the Middle Ages took upon themselves the arduous, temper-trying, and often thankless, task of keeping school. It may safely be averred that there is no past work upon which the Church may look back along the vista of time with more unalloyed satisfaction than upon this educational work. Yet the aim was narrow, and the studies, looked upon as intellectual gymnastics, dwarfing.

Such education as was to be had through these means was given by schools attached to the cathedrals and monasteries, where, in the one case, the chancellor of the diocese,—in the other, the abbot,—was the head master or director of studies. These schools, while making provision primarily for the regular training of the clergy and choristers, opened their doors to such of the laity as chose to avail themselves of them.

school system" as essentially American, and upon "free schools" as altogether un-English; and surprising, perhaps, to others who know that, when special Commissioners were appointed to make a study of foreign educational systems, America, no less than Germany and France, — nay, even more than Germany and France, — was the object of special reference and report. But if we investigate closely the mutual relation between the past histories of America and England from an educational point of view, we shall, I feel sure, become convinced of the fact that America learned much from England long before England had anything to learn from America; and that the growth of this American ideal, which has shown such vigorous development through the centuries that have followed the settlement of the English, must be traced through the centuries that preceded that settlement.

At all events, this is the point which it is the object of the following paper to try and make clear.

Gradually, however, a wider provision began to be made for the advancement of learning by the benefactions of bishops and other nobles for the founding of universities and colleges ; so that, from the thirteenth century onward, it was to the Universities of Oxford and Cambridge, in England, — of St. Andrews, Glasgow, and Aberdeen, in Scotland,—and no longer to the cathedrals, that the studious looked for instruction, thronging thither in ever-increasing numbers in proportion as the University teachers took a broader and more liberal survey of the field of knowledge.

No doubt the colleges, like the cathedral schools, were founded and endowed by episcopal benefactors as a more efficient means of teaching systematic theology and canon law. But this change of location had no sooner taken place, when other and wider ideas of the scope of education came to the birth, and the new centers of learning were gradually led to an extension of the subjects of inquiry and study,—to civil law, to arts (principally medicine,) to metaphysics, and, finally, to pure science. Then the conception of education,—not as a pastime for the gentle-born, but as a prime necessity of existence for a whole people,—not as an indispensable qualification for one profession only, but for all walks of life,—began to dawn upon the English mind. I say to dawn only, because four centuries have passed over England since, and she can hardly yet be said to have witnessed the noon-tide of that day when this high educational ideal is accepted, universally and without reserve.

For, first of all, it must be remembered that the word "people" itself came only very gradually to have the wide meaning which it has now in the century of household suffrage. We hear of the term first in connection with that new class which was called into existence by the growth of trade and commerce. Like everybody else outside the great corporation of King and Landowner, the trading classes found themselves in the presence of the feudal system with no personal liberty of body, and so *à fortiori* with no right to indedependent thought. But when the hungry eye of king and noble fell upon their thrifty accumulations and prosperous surroundings, and demanded aids and subsidies, they felt at length their hour was come ; they pressed the acknowledgment of their claim to rights and liberties with success ; they secured a voice in the parliament of the nation ; they found that by tightening their purse-strings they could largely dictate the national policy. It was these,—the middle classes as we now call them,—who, when they had reached their position of comparative political independence, came to realize the value of intellectual independence also, and so came to feel the need of education, or were offered facilities for it by those far-seeing ones who thus early recognized that they "must educate their masters." But the artisan and the laborer,—the working-classes as we now call them,—were serfs and hinds, mere hewers of wood and drawers of water; and, as such, being insignificant politically and socially, were not even reckoned among the "people" of England,—were certainly not present to the consciousness of even the most enlightened statesman or most benevolent churchman when considering the educational needs of the community.[1] In fact, the wider educational conception has grown only with the growth of the wider political conception attached to the word "people."

And very slow and very late this growth has been in England. In Scotland and in America the movement has been a more rapid one, both democratically and educationally; but the same holds good,—the advance of the educational and political franchises (so to speak) has been very conspicuously a simultaneous one in the history of these three countries; and we have ample materials at hand for the broad induction that, as regards the English-speaking races, at least, *the extension of education is always the immediate consequence of the extension of political power.*

I can only touch upon a small portion of the great field of inquiry opened out to us by this proposition. I shall try to show how that mighty tidal-wave of knowledge that flowed by us in the sixteenth century,—and which was as much the result of the great intellectual revolution known as the Renaissance as the recent tidal-wave felt on the shores of Ceylon was of the eruption in the Straits of Sunda,—how that knowledge-wave, I say, was affected by the action of the current political wave of the times that followed. The well known phenomenon that two waves meeting in "opposite phases" neutralize each other, but, meeting in "the same phase," produce a wave of double the height, finds its counterpart in the history of my subject; and a comparison of the progress of education in the three countries I have named, its vicissitudes and its triumphs, not only bears out this analogy but incontestably proves that the wave of political exclusiveness has always met the wave of education in *opposite* phase,—checking, reducing, limiting, or destroying the now well-recognized blessings that flow from it. To prove this, let us return and pick up the dropped thread of early educational history in this country.

After the substitution of colleges for cathedral schools, experience

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[1] The investigations of the Charity and Schools Inquiry Commissioners lead to the conclusion, that a very few schools indeed were founded and endowed, before the Reformation, for primary education alone, and even these seem to have been speedily appropriated by the middle-classes.

soon showed both to teachers and students that substantial progress
was impossible in the presence of the serious ignorance of those who
the universities. It happened that, just at this time,
ent against the church which compelled Edward III.
neet the wishes of his parliament by taking the Lord
ip from the great ecclesiastic William of Wykeham,
rrent strongly in the direction of separating the clerical
nctions. And so the remedy for the prevailing igno-
d, not in going back and removing the decayed and
dral and monastic schools, but by a new departure
is new departure in educational matters took the
ling of schools at some main centers of population,
l instruction, preparatory to the University, might
rs of tenderer years; and this, not on the strictly
a clerical school, training for ecclesiastical func-
but on as broad and unprofessional and untech-
ed men then knew how to make it.

es of this, we may cite the action of the great
keham, who founded his school of Winchester
eder to his New College at Oxford, which he
rs before; also of Henry VI., who, in 1446,
s College at Eton, to serve as an auxiliary to
idge, founded by his royal charter in 1441.
these two are samples, and, indeed, nearly
next century under the impulse of the
e a gratuitous, or almost gratuitous, edu-
erefore, be inferred that, where this was
, or was intended to be given, to "the
ses whom we so often think of under
es of Eton College, for instance, after
the gratuitous boarding, lodging, and
ars, makes a special and peculiar pro-
or thirteen *poor* youths, who were to
vost and Fellows, and to be instructed
hen they might be fit to take Holy
keeping up a supply of young servi-
anks of the "inferior clergy" when
ent difficulties, and was accordingly
Paul's School, founded by Dean Colet
o 153 children, makes recognition of
nongst the lower orders by providing,
one poor scholar."

But even when the term "poor" is found in connection with the charters of these early schools, it did not, as a rule, connote what we usually understand by the term; *i. e*,, the weekly-wages class, — the journeyman, artisan, laborer, plowman, and the like.[1]

The sum and substance of my investigations into this portion of educational history points indubitably to these two conclusions: First, that the earliest foundation-schools of this country were intended, principally, for the *middle* or *trading* classes; and, secondly, that instruction, together with, in some schools, board and lodging, was *gratuitous*. Here, then, we are led to ask the question: On what principle did founders and benefactors act when they thus made a free gift to those who could well afford to pay, in part at least, for the benefit received? How was it that no dread of demoralizing, of pauperizing, was before their eyes? How was it that they had never heard of, or, at all events, heard of only to reject the theory,—raised of late by some to the dignity of an educational axiom,—that people only value what they pay for, or value a thing only in proportion to what they pay for it? How came it to pass, I ask, that, whether it was a monarch like Henry VI., a bishop like Wykeman, or a dean like Colet; whether it was a city knight like Sutton at Charterhouse, a grocer like Sherreff at Rugby, or a yeoman like Lyon at Harrow, yet they, one and all, — without concert or conference, without pressure from league or caucus, — came to the conclusion that, if they founded a school, — even a school for teaching Latin, Greek, and Hebrew to the sons of comparatively well-to-do people,—it ought to be a free school?

To my mind there is only one way of accounting for this. These

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[1] Striking evidence confirmatory of this has come to my hand from the publication of the Register of Merchant Taylor's School from 1562 to the present day, recently compiled by an old scholar and school-fellow of mine, Rev. C. Robinson. Merchant Taylors' school is not strictly an endowed school, as the cost of its maintenance is not defrayed out of any special funds devised in trust for the School to the City Company whose name it bears (as in the case of St. Paul's School, under the Mercer's Company), but is defrayed out of the general income of the Company, which has, of its own free will, annually, ever since the foundation of the school, charged itself with the sum required. Our main argument will not, therefore, be weakened by finding a slight departure, as we do here, from the principle of entirely gratuitous education. The original statutes set forth that, out of 250 scholars in all, 100 only were to be taught free on the ground of being "*poor men's* sons"; 50 were to be charged 2*s.* 6*d.* a quarter, and 100, 5*s.* a quarter.

Now, turning to the Register to see what class of persons were there considered to be "poor men," what do we find? The very first entry of admissions taken *verbatim* from the Company's books is as follows:

"Fyrste Oct. 1562. Samuel Fisher son of Jhon Fisher, *mynister*, is admitted to be one of the C schollers that are appointed to be taught freely within ye Schole."

Then follow the names of other boys together with the names of their fathers, and the founders of schools were something more than men of great enthusiasm for learning,—they were also men of great good sense. They knew that they were in advance of their times in their educational theories. Feeling,—and being the *exception* in feeling,—how important, from a national point of view, the diffusion of education among the ignorant middle classes was, motives of patriotism led them to become missionaries of education; and, like true missionaries, they were conscious that the new gospel must be offered "without money and without price,"—like that other and greater Gospel,—if converts were to be made of an unwilling, prejudiced, and misbelieving world.

When the church required for *its* dignity, stability, and order, a continuous supply of learned bishops and priests, and of carefully trained organists and choristers, each episcopal "cathedra" had its cathedral school, and education and instruction were offered free to all who would resort to them. So, when far-seeing and patriotic men felt that the nation required for the due discharge of its growing responsibilities, for the perfecting of its more elaborate organization, local and imperial, a continued supply of able men to serve her in Parliament and Privy Council, at the Universities and in the Professions, in the discharge of multifarious executive functions in county and in borough, they founded the grammar schools in the populous towns, and provided that the best education they knew of should be given to all comers *gratuitously*. You cannot get people to pay for what they do not desire. No desire existed in this case. A new desire had to be created. Disciples had to be obtained, who, in their turn, might become its apostles in the homes of noble and squire, of franklin, yeoman, and burgess. And Wisdom was justified of these

Trade-guilds of which the latter were members. But the high position of these City-guilds in the 16th century, coupled with the fact that cadets of noble and gentle families frequently entered the ranks of commerce, and were enrolled as freemen of City Companies, makes it by no means improbable that some of the scholars' fathers, who are described as vintners, grocers, merchant tailors, salters, leather sellers, etc., were not actually, or actively, engaged in the trades to which they are assigned in the Register.

Curious confirmatory evidence of the absence of such poverty among these "poor men's sons" as would be prevalent among the laboring classes of the time is furnished by the fact that,—according to a rule which survived in full force down to my own school days,—every scholar at Merchant Taylors' School,—and the same was the case at the wholly-free school of St. Paul's,—had to come provided with "wax candles" at the cost of his friends, and "at noe time of the yere"—so runs the statute,—"shall they use tallow candles in no wise, but wax candles only." Now, when we consider that these schools are situated in the heart of the city, and that they met at seven in the morning, and broke up at five in the evening, in *winter* as well as in the summer, it will be plain that, even though the lamp of knowledge might burn gratuitously, the wax candle must have been a considerable item in the cost of acquiring knowledge, and would generally have exlcuded those that we should designate as "the poor," even granting that it was not originally intended that they should be excluded.

children of hers. The blessings of education were speedily recognized. The desire, once created and fostered in the breast of a few, eventually gathered force and spread. The bribe and bait of free education became less and less necessary every day. The schools were thronged with eager candidates for admission. Then came the time for the imposition of fees; the price rose with the growing demand; and thus, gradually, as we know, the College of Eton opened its doors to its "Oppidans," Westminister to its "Pensioners," and Shrewsbury to its "Aliens,"—scholars who were admitted by the side of the free scholars on payment of the whole cost of the education. Some schools, like Merchant Taylors', demanded a moderate payment from all alike; others, like St. Paul's, and King Edward's School, Birmingham, remained free schools till quite recent times; while a few, such as Harrow, were gradually made so costly as to become exclusively the schools of the rich.

Such is the history of school-fees. It is all-important to remember that in the sixteenth and early part of the seventeenth century the schools of England were, almost without exception, free schools. But, although it is undoubtedly true that schemes of education anterior to the Reformation did not reach,—even where they may have been intended to reach,—the laboring classes and "poor" folk generally, yet there is no doubt that the educational history of that period marks a notable extension of educational facilities, both laterally in range of subjects, and vertically downward both in the age and rank of the recipients. To this extension the "Revival of Learning" and the "Reformation," at the end of the fifteenth and beginning of the sixteenth centuries, gave a further and more powerful impulse, and the fashion of founding grammar schools made rapid progress.

The young scholarly Edward VI. gave royal countenance to the movement, under inspiration from the able scholars of the New Learning who instructed him; and by their advice, pledged as they were to the principles of both movements, the lands of the secular and religious houses, chantries, and guilds, which his father had confiscated, were restored for national uses to education instead of to religion. So that, although the abrupt dissolution of the monasteries exercised a momentary disturbing influence upon the resources of education accessible to the people, yet the part taken by Henry VIII. in a small degree, and by his son Edward VI. in a greater degree, in endowing schools out of the forfeited lands, brought new educational life to many provincial towns hitherto destitute of all educational appliances. King Edward's views were seconded by his sister Elizabeth, who founded Westminster, and by many private benefactors in her's and the succeeding reigns; by the Merchant Taylors' Company, who founded their famous schools in London, and Great Crosby, near Liverpool; by Lyon, Sherreff, and Harpur, the founders respectively of Harrow, Rugby, and Bedford.

Let us here pause to take note of the veritable revolution which this founding of the grammar schools worked throughout the country. First and foremost it opened the sources of ordinary secular knowledge more than ever to the middle classes of the nation. It imbued the great trading classes of this great trading nation from their early years, with the habits of intellectual exertion and inquiry. It re released learning from the church authority exercised by the ecclesiastical teaching in the cathedrals and monasteries; it reduced within moderate limits the authority, long fostered in the universities, of that Aristotelian philosophy which was as narrowing and unfruitful as the dogmatic theology which shared with it the power to enthrall the human mind. "The method of teaching in the grammar schools," says Dean Merivale,[1] "was freed at once from all such imperious prescriptions." It could not be otherwise. Set a lad down with a book of Virgil or Homer before him, and place a grammar and a dictionary in his hands, and direct him to make out the meaning for himself, and you at once introduce him to the deep mysteries of independent research, individual responsibility, and private judgment. He must learn for himself, and judge for himself. He has become free to inquire, to compare, and to determine, — nay, he is commanded to do so. Here is an entirely novel experience in the intellectual history of the race. The boy is no longer in intellectual swaddling-clothes, bound to absorb only the food prepared for him by other hands, as an infant sucking out of a bottle. He is now a free intellectual agent. Confidence in his own decisions grows apace as he solves the ever-recurring problem of interpreting the unknown by the known; of reducing the words, sentences, and idioms of a strange language into the corresponding phraseology of his own tongue. He feels, of course, day by day, as he plods along, "the advantage of having a master, as guide and teacher over him to supply his deficiences and help him over difficulties; but still grappling with his task he comes more and more to feel that it is with his own grammar and with his own dictionary, after all, that he gains the victory. Now what grand intellectual training this is! The young scholar thus goes forth from school accustomed to use his own personal judgment. He has thus acquired his knowledge of Latin and his Greek, and he knows how he acquired it. Shall he not go on in the strength of that success, and apply to all other matters of intellectual interest that now solicit his riper judgment the same process of thinking and deciding for himself? The Reformation had but just now declared the right of private judgment in the greatest of all intellectual concerns, — the pursuit of religious knowledge. Though it had not left him without spiritual pastors and masters to guide, encourage, and persuade, it had finally conceded to the conscience of the individual learner the duty of working out his own salvation by the reasoning power which God had given him. The grammar schools taught English schoolboys to cultivate from the first that independence of judgment in secular matters which they must ultimately exercise on their own responsibility in religious. And the teaching of the grammar schools soon made itself manifest. The boy became the father of the man. The same generation of Englishmen which had worked its way through grammar and syntax into Virgil and Homer, by the strength of its own skill and will, grew up to examine boldly and confidently all the mysteries of religious sanctions and systems, and all the knotty points of political thought and speculation."

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[1] In an address to the Historical Section of the Royal Archæological Institute, delivered at Bedford, 1882.

As might have been expected, the generation to whom this new revelation of its powers, its rights, its duties, was thus somewhat suddenly made, rushed with some precipitation upon problems, many of which we know to be unsolvable; others of which an easy-going world, satisfied with itself, would willingly leave unsolved. Freedom of thought played round venerable institutions, ecclesiastical and secular, and time-honored doctrines, theological and social. People began to question the hitherto undisturbed and unquestioned prerogatives of kings and prelates, of monarchies and churches, and, to the great alarm of those in possession, proceeded to brandish the charter of their newly-found intellectual liberties in the face of old tradition and established authority.

The whole country moved rapidly forward under the impulse of this movement, and, for a time, the political and educational waves were in "the same phase," and contributed sympathetic energy to each other; but only for a time. Toward the end of the sixteenth century a reaction set in; repression, persecution, the arm of the law, ecclesiastical and civil, was called into exercise against the advocates of further reforms; and the outlook appeared so gloomy and hopeless that many of the most earnest and thoughtful of that generation preferred to seek in a strange land a release from the religious and intellectual fetters that bound them, ever closer and closer, at home. Hence came, from small beginnings, that great movement toward the continent of the West which was pregnant with such mighty results in the future.

But, before we follow the course of educational history thither, it will be good for us to complete our survey of its course in England. It must not be imagined that, in such a time of active human interest as the sixteenth century, the mental condition of the poor did not attract the attention and excite the sympathy of benevolent people. In fact, the laboring classes, both in town and country, were often in the minds of the advisers of Henry and Edward and Elizabeth when suggesting schemes for the application of endowments to education. An incident in the life of Cranmer mentioned by his biographer, Strype, illustrates not only the prevailing conservative feeling of the time on this question, but also the advance toward the education of these classes which the more enlightened were prepared to take. "It came to pass," says Strype, "that when they should elect the children of the grammar school,"—*i. e.*, the King's School newly converted out of the confiscated endowments of the monastery and cathedral school of Canterbury,—"there were of the Commissioners more than one or two who would have none admitted but sons or younger brothers of gentlemen," urging that "husbandmen's children were more meet for the plow and to be artificers than to occupy the place of the learned sort; . . . for we have as much need of plowmen as of any other state, and all sorts of men may not go to school." To which Cranmer replied: "I grant much of your meaning herein as needful in a commonwealth; but yet utterly to exclude the plowman's son and the poor man's son from the benefit of learning . . . is as much as to say that Almighty God should not be at liberty to bestow his great gifts of grace upon any person, nor nowhere else but as we and other men shall appoint them to be employed, according to our fancy, and not according to His most godly will and pleasure, who giveth His gifts both of learning and all other perfections in all sciences unto all kinds and states of people indifferently. Even so doth He many times withdraw from them and their posterity again those beneficial gifts if they be not thankful. . . . Wherefore, if the gentleman's son be apt to learning, let him be admitted; if not apt, let the poor man's child that is apt enter his room."[1] In many cases private individuals left funds for primary schools, or made provision for the education of mechanics and laborers alongside of a wider scheme aimed to be a preparation for the universities; but, as a matter of fact, the philanthropists who advocated these theories were in advance of their age, and met with only the feeblest response from it; the prevailing opinion was unfavorable to the extension of education to the laboring population, who themselves neither felt the want of it nor expressed a desire for it.

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[1] Quoted from *Report of Schools Inquiry Commission;* vol. i., p. 122.

The seventeenth century came, to find that the enthusiasm of the Revival of Learning had largely burnt itself out, and the Reformation movement had already crystallized itself into the shape into which Acts of Uniformity, Courts of High Commission, and the almost papal infallibility of Tudor and Stuart sovereigns had moulded it. The theory that every man should be able to read the Bible in his own tongue had ceased to be prominent in the preachings of the church authorities, who ranged themselves on the side of fixed and established doctrines, and found that the free play of thought round an open Bible encouraged, — nay, invited, — difference and dissent. Thus a sensible weakening of the downward educational movement became apparent. "The schools in town and village were put more and more under the control of the clergy, schoolmasters were required to be licensed by the bishop of the diocese, and strict inquiries were made as to their orthodoxy; while the teaching of reading and writing and purely secular subjects in the parochial schools (such as they were) became subordinate to instruction in the catechism and to going to church to hear sermons."[1] The schools of a higher grade also felt the depressing influence of the time, and the flow of money and lands, which had set toward the endowment of grammar schools to the extent of twice as many per annum in the Commonwealth as compared with the reign of Charles I., again ebbed perceptibly. There was a dead calm. No breath of public opinion came to stir the stagnant atmosphere which pervaded the Board-rooms of corporations, chapters, and other governing bodies of endowed schools. No one cared to see the curriculum modified so as to meet changed needs or more enlightened educational views. The schools were neglected and fell into decay. In many cases the funds were misappropriated, or the trust grossly abused.

As we enter the eighteenth century we find that the final settlement of the dynastic and constitutional questions by the advent of the Brunswicks came upon a nation earnestly longing for rest, and thankful at having found it. All desire for reform was exhausted and satisfied. Commerce increased at enormous strides; land rose in value; labor was plentiful; everybody prospered; and, under such optimistic conditions, the first half of the eighteenth century witnessed a profound political torpor, out of which the outbreak of the French Revolution was destined to be the rudest awakening. True, a cry was raised more than once in the century that mendicancy, brutality, and lawlessness were increasing to an alarming extent; and that the gross ignorance of the "lower orders," and the absence of effort on the part of their betters to ameliorate their condition, were largely responsible for the insecurity of which such a state of things was increasingly ominous. Once again benevolent people came forward with funds, and what is known as the Parochial Charity School was the outcome of the movement. But these schools soon earned a doubtful reputation for pretentious inefficiency. Board and lodging, and other eleemosynary advantages, — blue coats and red cloaks, yellow caps and green breeches, — the staring livery alike of the donors' pride and the recipients' humility, — were distributed together with an education studiously adapted to keep down the recipients to the station of life which the donors thought fit for them.

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[1] FRANCIS ADAMS: *The Elementary School Contest.*

The prevailing sentiment on this subject is admirably expressed by the words which Dickens put into the mouth of that eminently typical Philistine, Mr. Dombey. Mr. Dombey, you will recollect, had decided to do a magnanimous act of inexpensive benevolence toward the nurse of little Paul, by obtaining for her son a nomination to a "charity school," and Richards, the nurse aforesaid, is called into that grandiose presence and thus addressed: "I am far from being friendly to what is called by persons of leveling sentiments, general education. But it is necessary that the inferior classes should continue to be taught to know their position, and to conduct themselves properly. So far I approve of education. Having the power of nominating a child on the foundation of an ancient establishment called (from a worshipful company) the Charitable Grinders, where not only is a wholesome education bestowed upon the scholars, but where a dress and badge is likewise provided for them, I have nominated your eldest son to an existing vacancy."

But even these educational doles excited some hostility on the score of their danger to the existing social order of "upper" and "lower" classes, and there were large numbers of influential persons in church and state who assented (though not perhaps with equal cynicism) to the dictum of Mandeville,[1] that, "in a free nation, where slaves are not allowed of, the surest wealth consists in a multitude of laborious poor; and to make poverty happy and people easy under the meanest circumstances, it is requisite that great numbers of them should be ignorant as well as poor." On the other hand, later on in the century, Adam Smith preached,[1] and was the first of Englishmen to preach, the paramount importance of compulsory elementary education; but the nation went on in complacent optimism and in a general attitude of rigorous repression toward the "lower orders" until it was startled out of it by the French Revolution. Henceforward, "the diffusion of knowledge became a distinct and avowed article of political faith amongst large classes in this country." It found expression in Mr. Whitbread's Bill for Universal Education of the Poor in 1807, which passed the House of Commons, but was eventually thrown out by the House of Lords. Wordsworth's eloquent appeal to British lawgivers (*Excursion*, book ix.,) appeared in 1814, just at the time when the downfall of Napoleon made it at last possible for a domestic question to obtain a hearing. Joseph Lancaster and Andrew Bell were the earliest practical educationists of the Second Revival whose voices were listened to. Brougham and Russell took a far-seeing statesman's part in agitating the question of the hour on the platform and in the "venerable halls" of British lawgivers. But still that hour lingered; still the lawgivers "refused to echo the sublime decree." Not until the Reform Act of 1832 had further strengthened the political influence of the people did Parliament make any definite recognition of the state duty of maintaining primary schools; and not until the later Reform Act of 1867 had brought the suffrage in large measure down to the masses themselves did England witness the beginning of the end of the long struggle for her educacational ideal,—a state-supported system of primary education.

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[1] Quoted by ADAMS: *The Elementary School Contest.*

Thus far England. But in America things took a different turn; how different, we must go back to the sixteenth century to see. The particular point at which the Reformation movement was arrested in England was more or less of an accident. Not that anything is really accidental in history; but what I mean to convey is, that the Reformation stood still, not in obedience to any finality or completeness in the logical position, —*quâ* religious reform, —arrived at, but rather under pressure from opposing political influences which it had not itself created, and for which it was in no way responsible. The Reformation came to a stand-still just where the fiat of a sovereign who was politically absolute chose to say that it should; and the Act of Uniformity embodied the ecclesiastical thus-far-and-no-farther of Queen Elizabeth. As is well known, the objectors to the *status quo* ultimately ranged themselves,—at least, the vast majority of them,—

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[1] For a very small expense the public can facilitate, can encourage, and can even impose upon almost the whole of the people the necessity of acquiring those most essential parts of education (viz., to read, write, and account)."—ADAM SMITH: *Wealth of Nations;* ii., 368.

under two denominations, the Independent and the Presbyterian. The former, who were the opponents of all hierarchies and ecclesiastical organizations whatsoever, and who laid down the novel principle that each congregation should be a church in itself, were naturally the first to feel the strong arm of repression. The Presbyterians, however, were not so much dissenters as reformers, and sought only to make the church, of which they were members, more Protestant and less Papistical in usages, ceremonies, and doctrines than it had been constituted by the prayer-book and articles. Their turn came later on.

Again, most of the Independent congregations fled this country *in the early part of James I.'s reign*, and therefore before the divine-right maxims of that sagacious monarch had, in the hands of his son, brought the English people face to face with the great struggle for constitutional government. The exodus of the Independents, then, first to Holland and afterwards in the *Mayflower* across the Atlantic to Plymouth in New England, was dictated, almost entirely, by *religious* considerations. On the other hand, the exodus of the Presbyterians, who made their first settlements at Salem and Boston in Massachusetts, took place *after the accession of Charles I.*, and, therefore when the country was already in the shadow of the great political crisis which that king was forcing upon the country. This latter movement was, accordingly, largely determined by *political* sentiments. The men who took part in it were political, as well as religious, reformers.

And this leads me to notice another important point of contrast between the Independent and Presbyterian emigrations, and I wish to do so with some emphasis, as it has considerable bearing upon subsequent educational history. The Independent congregations, who became refugees from this country, were drawn largely from the small towns and rural districts. If we can realize the England of the sixteenth and early seventeenth century, we can see how much that implies of ignorance, not only of politics but also of "letters." Not that the Revival of Learning had done nothing for the small tradesmen and farmers, the artisans and agricultural laborers. It had given them a Bible in their own tongue, and they had learned to read it, and educate both the heart and the imagination by familiarity with its inspiration and its poetry. But still they belonged to the "poor," the "unlettered" class. And so it need not astonish us to find that, though these (Independent) Pilgrim Fathers will be forever held in veneration by Americans as the founders of their religious organization, yet it is not to them, but to the later

(Presbyterian) settlers in Massachusetts that honor is paid as the founders of their political and educational systems. For these latter were prominent men in this country before they brought a nation to its birth in another. Many of them had sat in parliament, and had taken an active part in the protests against illegal taxation and arbitrary government. Many of them were wealthy. There were country squires, clergymen, lawyers, merchants, the relatives of the greatest men of the day, among their number. Winthrop, the first Governor of Massachusetts, was a country gentleman of good estate in Suffolk; the Vanes and Bellinghams had been land-owning families in England for centuries; Eaton, another prominent colonist, had been English Minister at the court of Denmark.

Here, then, we are in the very midst of those classes of English society who (as I have pointed out) had been reached by the literary, as well as the political, wave of the sixteenth century, who had come under the training of the public schools and grammar schools, and largely of the universities themselves. What a contrast here to the class of people who generally compose the settlers in a new country! The number of learned men among these later Presbyterian colonists of America is certainly most extraordinary, and it explains much of what has surprised Englishmen since. It has been said that between 1630 and 1690 there were in New England as many graduates of Oxford and Cambridge as could be found in any population of the same size in the mother-country. An American writer (Mr. Savage), in his History of New England,[1] asserts that during the first part of that period there was in Massachusetts and Connecticut a Cambridge graduate for every 150 inhabitants, "besides sons of Oxford not a few." With these facts before us, it is no longer astonishing that the first thought of such a community of colonists, after establishing a church, was to found a school, in order that (to quote the old law of Massachusetts) "learning might not be buried in the graves of their fathers." Nor shall we altogether feel surprised that the first school set up at Boston, — and that within five years of John Winthrop's arrival in Salem harbor, — should be a school for teaching Latin and Greek, — a school, in fact, on the model of the great public schools of England; and, further, that in the year following, the people of Massachusetts should take from their own treasury the funds with which to found a University; so that (as the American historian, Tyler, remarks [1]) "while the tree-stumps were as yet scarce weather-browned in their earliest harvest-fields, and before the nightly howl of the wolf had ceased from the outskirts of their village, they had made arrangements by which, even in that wilderness, their young men could at once enter upon the study of Aristotle and Thucydides, of Horace and Tacitus, and the Hebrew Bible."

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[1] Quoted from a Speech by Hon. FREDERICK O. PRINCE, delivered at the Dedication of the New Boston High School Buildings, 1881.

Much is intelligible now which must appear so unaccountable to those who have fancied that the band of small tradesmen, farmers, and artisans, known as the "Pilgrim Fathers," laid the foundations of American educational life. And yet, the more one thinks of it, the more remarkable and unexpected does this uprearing of a Latin school and an old-world type of University appear, considering when and where it took place. Surrounded, as these exiles were, by the realities of hard and stern material conditions requiring all their energies,—more than all their knowledge, and an inordinate sacrifice of human life to reduce to subjection, yet their first thoughts were directed, not to the training of hand and eye, muscle and sinew, but of brain; and to the humanistic, rather than to the realistic, side of accessible knowledge. This fact, however, testifies to the tremendous influence of the literary impulse of the sixteenth century; and, while doing so, also affords us a measure of the magnitude of that impulse. In freshly-cleared backwoods, where counter-influences were largely present, strong enough, one would think, to destroy its action altogether, the phenomenon is almost more strikingly exhibited than in England itself,—the wave is, if anything, higher. Nay, it *is* higher. For, look what these men did. Not content with providing educational machinery for the well-to-do of their community, they took the next step. As has been well said, "Theirs was a social structure, with its corner-stone resting on a book." No single member of that society could be allowed to grow up in ignorance of that book, and of the structure of society based upon it. Universal education was a universal necessity. The public sentiment, born in the *old* world, but finding free play for development only in the *new*, was strong enough to lead at once to the next step in educational legislation, and as early as the year 1649 (*i. e.*, within twenty years of the Massachusetts settlement), every New England colony except Rhode Island had made public instruction for the whole population compulsory by law.

We have seen, then, that the English settlers in America evolved an Educational Ideal, which embodied a *complete* system of education, covering the whole range of existing knowledges, — not only Latin and Greek for the few, but reading writing, and arithmetic for the many, — supported by the taxation of the whole people, managed by their representatives, and open to all without distinction of class and without school-fee imposed upon the individual scholar. And they did all this because they were what they were, because their past history was what it was, and because their educational traditions derived from their former life in England led them whither it led them. True, they had no reserve funds with which to *endow* their schools, and were not likely to have them, and so they had to cast about them for something to supply the place of those benefactions with which education had been supported in England,—and they found it in the form of appropriations from the common fund of the community, and not in the shape of school fees. This latter plan is the first thing that would occur to nineteenth-century Englishmen with their traditions of later growth; it is the last thing which would, or did, occur to the Englishmen of the sixteenth century. However much we may have become familiar with school-fees since,—so much so as to have lost sight of the natural history of their growth, and, in preaching the nineteenth-century gospel of elementary education for the masses, to have gone counter to the wisdom of our ancestors,—it is a fact that school-fees were as good as unknown to Englishmen of the sixteenth century. And so they did not, at first, enter into the school system of the New England settlers.

Thus we see,—as, if there is any philosophy in history, we might have expected to see,—that the American common school system, covering free secondary as well as primary education, was no abnormal phenomenon, no new creation, but a natural growth from antecedent experience and race-instincts. This American Ideal, grand as it is in the breadth of its conception, noble in the beneficence of its purpose, fruitful, as it has proved itself to be, of such splendid political, social, and material results to fifty millions of people, was, after all, a development of an English Ideal, only modified and adapted to a new environment.

One word more. Knowing what we now know of the source from whence this mighty educational impulse sprung, are we not justified in asserting that the development of the same impulse, if it had been allowed to follow its natural course, would, in settled, civilized England, have led to similar provision for primary education in the sixteenth century?—that the movement downwards would not have stopped at grammar schools if the political conditions here had been favorable? They were favorable in America; they were nearly as favorable at the same time in Scotland; and therefore both these countries secured for themselves a national system of education in the seventeenth century instead of in the nineteenth. It was in the air everywhere,—in England, no less than in Scotland and in New

England, — but it was stifled here, and by what? Scotland had a democratic church and an aristocratic state, but the former was stronger than the latter; America had both church and state democratic; England had both church and state based on the principles of political exclusiveness, and national education became an uncomfortable dream that for a little time haunted, and then vanished altogether for a couple of centuries from, the sleeping brain of statesmen and churchmen. Well might the poet Wordsworth (in the year 1814) cry aloud, and yet cry as in the wilderness,—

> "Oh! for the coming of that glorious time
> When, prizing knowledge as her noblest wealth
> And best protection, this imperial realm,
> While she exacts allegiance, shall admit
> An obligation, on her part, to teach
> Them who are born to serve her and obey;
> Binding herself by statute to secure
> For all the children whom her soil maintains
> The rudiments of letters."

England had first to become a democratic country before its inhabitants could become an educated people.

It was a *dictum* of the philosopher Bacon that "Knowledge is power." No one will deny that this is true, in a sense. But the power of the people came in chronological order *before* their knowledge. This is the reading of history, — the natural history of the growth of the Educational Ideal. And, in the presence of this experience, who is there who will say that the converse of that apothegm is not also true, and that, in another and equally pregnant sense, "Power is knowledge"?

HOW TO EDUCATE CHILDREN WELL.

BY MRS. HORACE MANN.

Education must begin with the babe, to avoid all errors. Indeed it must begin before the babe sees the light of this world. Pre-natal conditions determine much, though not all the conditions. I know a child of remarkable power of self-control and good temper, as well as capacity of reasoning, whose mother was so terrified at the prospect of child-birth that she and her friends feared her child would suffer mentally and physically; indeed they were prepared to see it the victim of its nerves and of unreasoning terrors. But the mother was a woman of remarkable character, well-trained mentally, and whose sympathetic nature made her the idol of her friends,—one to whom all turned in the hour of trial for comfort and consolation; one who could carry sunshine into the darkest places; who, if parents were overwhelmed by grief or anxiety, could take hold of the children and save them from despondency and unnatural seclusion; could interest the erring in good deeds without discouraging them, so that they would confide their very faults to her, and come to her to solve doubts and explain mysteries they did not dare reveal to others. For she knew how to respect childhood as well as to love it, and nothing wins a child's confidence like that combination. She recognized and lamented her own terrors, which had been excited by painful observations; but in that condition woman is not always entire mistress of herself and her nerves. She knew this, and fastened her mind upon the character she wished to cherish in her child. She breathed uniformly the mental prayer that it might have self-control and a serene temper, and her wish was strikingly answered. This instance is worth a volume of speculations upon the subject that in these days occupies the thinking mind so earnestly.

Another condition of good education is the right influence of those who have the care of children. The principle that actuates royal families in the choice of nurses should be followed universally in this respect. The wisest and best should be put in that place instead of the ignorant. If a mother cannot be the nurse of her own child,—dress it, feed it, put it to sleep, give it her sympathy on all occasions until that sympathy is so established that the child will inevitably go to her when he needs it,—she may miss some of the most important eras in its life. There is an organic relation with the mother, whose expression is in the very pressure of her arms, whose place nothing can take unless the father is equally loving and tender,—a condition very rarely fulfilled, but not impossible. Unsympathetic treatment shuts up a child sometimes forever, and if not forever, long enough to engender a habit of not communicating its feelings and impressions. Children are frequently prevented from confiding in their mothers by the hirelings who have the care of them; who threaten them if they expose their short-comings; who deny their faults to their mothers even before the children, telling falsehoods to shield them, thus enlisting the childrens' selfishness in deceiving them. This kind of corruption can begin very early, and is an appeal to the human side of their nature, which keeps the divine side long in abeyance, if it does not kill it out, all through the period of childhood. When the age of moral reason comes, the recuperative forces of the soul may rectify the evil partially, but the opportunity of transparent communication has been lost. It must be sadly confessed that selfish and thoughtless mothers do their children equal injury, and often sacrifice them to their indolence, their vanity, and their own lack of truthfulness. To hunt equivocation and falsehood into corners effectually can only be done by mothers who love the little delinquents who are trying experiments with their faculties, or by teachers who have a good endowment of the maternal instinct, and have studied childhood in the light of mental science. Mothers who have three or four litte children at once, as it were, cannot do full justice to them without help; but their sympathy for each child can make them, and should make them, the leading minds in this work. The best assistance a mother can have, after babyhood is passed, is the society of other children under able guidance. From each other they can learn to hear and forbear, to love and be generous to each other, to be truthful, to cultivate their faculties by exercise and co-operation (not by emulation, which is an unholy passion). Mothers should study the science of childhood as their best equipment for life, for it is a sad blunder to spoil the first child by making mistakes; and how often mothers do this!

The brute idea of education is to break the child's will instead of educating it. When he is put in possession of his will, half the problem of education is solved. Mothers should study the science of kindergarten,—for it is a science,—the fruit of years of observation and study, and cannot be comprehended without study. When fully appreciated by society, or that part of it influential in education, it will change the whole aspect of things, substituting real teaching for the apathetic and indolent imitations of old systems that have proved fallacious. Many people meet this assertion with the hackneyed remark, "What has existed so long, and been accepted so long, must be worth retaining;" but this is the senseless reply to all measures of reform, and does not recognize the principle that society is a growth, and must be ever progressing if the world is to be improved. Those who have lived long enough to see greed and selfishness keep pace, and grow with material prosperity like ours, pause and ask themselves, "Can there be no change for the better in our methods?"

Froebel gives a lovely description of the baby-mother setting a child to work to find leaves of the same shape, or pebbles of the same color, as he plays round the door-way while she necessarily works. It is good a lesson in classification as could be given in a school, and how much more pleasing! A box of miscellaneous buttons will answer the purpose for a child who must be housed. One error in the employment of little children,—and they must always be employed about something innocent or mischievous (innocently mischievous, if not harmless), — is to give them too great a variety of playthings. The universe is its best plaything, rather than objects of man's contrivance. The child can be generally directed how to play with it, and he learns its mysteries with wonderful facility, even without help. As far as he can be put in communication with nature, it should be done. Even a little patch of green, with its dandelions and buttercups, and a few insects wandering in such a miniature forest, is remembered even in old age with delight. A pile of sand or a pathway of gravel that a child can move and scratch; a river-side and its flowing water, birds twittering by, kittens and dogs occasionally appearing, while the fresh air fans his brow, give happiness enough. A farm-yard is paradise to a child, with its hens, chickens, and other fowls, calves, colts, little pigs, sheep, ducks on a pond, — involving feeding, shearing, hunting of eggs; then ploughing, mowing, scattering of seed, harvesting, threshing, hay-making, gathering of apples, and many processes that cultivate the intelligence and educate to a great degree. City-bred children miss all this; but even occasional visits to the country, now happily afforded to many poor children by enlightened charity, give opportunity for acquiring such love, or, at least, such love of it as never is lost sight of amid the din of cities.

"I wandered lonely as a cloud
  That floats on high o'er vales and hills,
When all at once I saw a crowd,
  A host of golden daffodils;
I gazed and gazed, but little thought

> **What wealth to me the show had brought,**
> **For oft when on my couch I lie**
> **In vacant or in pensive mood,**
> **They flash upon that inward eye**
> **Which is the bliss of solitude,**
> **And then my heart with pleasure fills,**
> **And dances with the daffodils."**

The mistake in the next stage is to teach little children too much at a time. Education should be an aggregate of results, the series of things gradually growing out of each other, regulated by adult wisdom; the child not being required to remember, but by frequent, agreeable repetition, learning to remember. He should at this age have no intellectual responsibility. To be kind and sweet is all the duty that should be required of him. His own natural curiosity will be stimulus enough, and the demon of competition should be kept at bay; for it is one of those natural propensities that, like gross appetites, should be checked rather than encouraged. We should be patient even if he fails in sweetness, for we may not know his trials. He may have been unjustly dealt with, and acting in self-defence, which is nature's shield against injustice, but should never be excited. Treat him and his possible faults with sympathy for his temptations, and he will be the first to accuse himself, which is healthy and a sure precursor of reform. All reprimand should be impersonal as far as possible, the application to himself left to the child. Tell a story to a child, in which similar but not identical circumstances occur;—his judgment, left free from personal considerations, will almost invariably be a just one, and bring the conviction home to him.

Story-telling is the form of instruction, especially of moral instruction, best adapted to childhood. A child's attention is most easily arrested by those things of which he has had experience,—then every word tells upon his sympathies; otherwise his attention wanders. The gambols of a kitten, the mishaps of a mother cat,—such as are recorded of Grimalkin in the "Original Poems,"—will bring shouts of delight from the little listener or tears of compassion; he will start from his seat, execute somersaults upon the floor, or hide his face in his hands over the woes of a domestic animal,—dog, cat, or bird. Formal lessons, unless disguised in play, as Froebel's teachings are, are not for this age. To rouse his curiosity, excite his activity, cultivate his dawning perceptions and his sympathies for his companions, for bird, beast, and insect,—these are the best food for him. These help his brain to grow without fatiguing or injuring it. The constraint of a school-room, in which little children are taught to sit still and be silent, their hands unemployed, their desire to ask questions suppressed, is the clipping of all nature's powers, and makes study hateful. To cultivate the heart should be the first aim of the true educator, and the faculties having been put in harmony with the universe, the universe will be the best teacher. Consult the child's tendencies and his inclinations in his later pursuits, — he will point out the path. The parents and the teacher should then be in hearty unison. The home must be for the manufacture of children, to borrow a commonplace phrase. This brings us to the sad subject of the desecration of homes. We must not ask what *is* the home education of children, but what *should* it be. Many homes are composed of such elements that evil influences are inevitable. Homes are God's schools for both parents and children, and the customs of society, as the world improves,—as it does upon the whole,—make them broadcast. What *might* be their influence? Nothing should be allowed to spoil them. They may be inherently spoiled by the false aims of parents, and these are irremediable by outside influences. The pursuit of gain, of vanity, of selfish pleasure, may spoil them.

The gennine home consists of parents, children, and grand parents. Sometimes it is best that the latter should be set in homes where there are no children ; but, generally speaking, so many elements can be regulated aright if parents only realize the necessity, and then the children will be gainers,—for reverence for old age and wisdom will do them good; but where they are not gainers, the paramount duty is unquestionably for the rising generation, and circumstances should be arranged in reference to them. Homes that do not deserve the name will always be such when they are made up of those who do not sympathize intelligently and affectionately, but make homes for show, or convenience merely, and for the display of vanity. In speaking of how children should be educated, we must confine ourselves to the ideal home. In the ideal home both parents will unite in the education of the children. All other objects will yield to this paramount one. A mother cannot be a frequenter of society, as it is called, who must leave her children to chances. A father must realize that, in point of strength, it takes two to bring up children aright; and God has placed two in that position, with corresponding duties. Children must not be made to feel that they are ever in the way, or troublesome (except for wrong-doing) ; but be sure of the sympathy of their parents, and not be made parties to any differences of opinion in their management, which may arise in the long and deep conferences intelligent parents, who are watching together the development of the children, must inevitably hold. Need I add that parents must be watchful over themselves, and exemplify in their conduct the principles they inculcate? They must govern their tempers, be just to others, disinterested, patient. Children who have once lost faith in the virtues of a parent become critical and suspicious, fretful, and unhappy. I speak from observation of life, not theoretically. The child's ideal should be sacredly guarded, and when he is thrown into the world he will have a standard with which everything will be compared.

We often hear the remark that we should let life educate the young; but this should not mean that the young should be exposed to everything. We do not send our children into the street to let them learn profanity, self-indulgence, and selfishness. Preserve and elevate, as far as possible. his ideal of life and society, and when he must go forth to meet life as it is, evil will shock and repel him. He will not touch the pitch, but will set himself to wash it away,—to dispel ignorance in others, to annihilate evil conditions within his sphere, and open up to others the advantages he has himself enjoyed. And what cannot one do who is enlisted in the work which, we fear, must long be the chief work of the good? We see lives of divine beneficence, like Oberlin's, De Gerando's, Elizabeth Frye's, Herr Wichern's, Florence Nightingale's, Mary Carpenter's, William Lloyd Garrison's, Octavia Hill's, Mrs. Hemmenway's, Peter Cooper's, Elizabeth Thompson's, Dorothea Dix's, and many others not known to fame, but equally powerful within a smaller sphere. When we see what such men and women do by self-sacrifice and devotion to their aim, it is not Utopian to say the whole world can be so educated. The highest intellectual aims are one part of such work, for one means of moral culture is to use every means of improving others in knowledge. Though not identical, they are kindred. When separated they not only lose their highest value, but knowledge becomes an instrument of evil. The cultivation of the intellect is a sacred duty, but may be perverted, and this principle should be instilled into the minds of the young.

When scholastic education for the young first began in Europe it was severed from all religious or ethical principles. The native language of the pupils was neglected (its use often *forbidden*) for the classic languages, which had not a ray of interest for the young pupil. His study was wholly forced, and *orbilionism*, as it was called, or the use of the long whip of the early centuries; was the instrument of this forcing. The dauphin, son of Louis XIV., who was to be made a prodigy of learning under Bossuet and other great men of the period, was whipped with it from early childhood to make him get his lessons, and Louis XIV. would sit by and see the skin of his little seven-year-old boy riddled by the conscientious duke (one of the child's tutors), whose function was the education-whipper (the conscience was only cultivated to obey the monarch, not the heavenly teacher in the soul). There was no appeal, of course, from Louis XIV., for even the popes of his time depended upon him for their tenure-of-office; and what was the result? The lessons were never got, or, if repeated, did not educate. The child *could not be educated;* Bossuet made unexceptionable text-books of all sorts, which are used even at this day. The child was a timid one, and grew up almost imbecile, though not endowed with good faculties by nature. Doubtless the fear of that long whip destroyed his mental power. He hated books,—his attention could not be gained; he was literally ruined. He was married early, and died early. The Duke of Burgundy, his son, was the next heir, and was placed at seven years of age in charge of the divine, Christ-like Fenelon, who knew how to forgive his enemies, and to do good to those who persecuted him. The duke was a bright boy, but a naughty child,—imperious, self-willed, cruel to his inferiors, defiant of his equals. Fenelon's method was the first departure from the old system of severity known. His method was *love.* He did not punish the child, nor did he overlook his wrong-doings, but made him see himself as he was. He won his heart, gained his respect, helped him to conquer his passions and cultivate his faculties for conscience sake. The young duke grew up saintly in character, — a fine scholar, a devout Christian. He did not care for power or royalty. He married a noble woman, and would have preferred a private life of domestic happiness and study, but Fenelon impressed him with his duty as a sovereign, and he tried to satisfy him. Even after he was ruthlessly separated from Fenelon, whom Louis XIV. banished to his diocese for life because he would not condemn Madame Guyon,—whose only fault was that she indulged in secret prayer, which was contrary to the views of the Catholic Church,—the duke continued secretly to ask his advice at every turn in his life, and would have ventured to disobey his grandfather and visited him, if Fenelon had not prevented it.

France cherished hopes that were long baffled by Louis XIV.'s long reign (of seventy years), and they were then cut short by the untimely death of the duke, his lovely wife and child. In the midst of that terrible century Fenelon vindicated the ways of God in the education of that boy, the first child of note so educated known to history. Yet scholastic education from that day to this has been disfigured with the barbarism of corporal punishment. At this very day, in our very midst, incompetent teachers are allowed to substitute the use of the rod for the love of knowledge! Study is thus made hateful to the many, and follows them into the higher education of the best universities, where the majority of the students neglect the advantages offered them. Till the kindergarten was discovered and set in operation by benevolent and far-seeing men, at the cost of untold hardships and discouragements, punishment was considered a necessary accompaniment of education. The youngest children were subjects of the ferule and the switch, and had their ears pulled for inattention, bad spelling, etc. The majority of educators were on that side. Even the native Indian sets a better example. They do not whip their children, but talk to them as if they were rational beings, and educate them generally to understand the universe and use its powers, as far as their native intelligence can interpret them; and it is by no means an ordinary education with .the universe for their means.

But a better day is dawning. Industrial education is one of the new lights. It is not for the sake of the profits of industry that it is an enlightening radiance. That is a collateral good to be desired and valued, but it is for the intellectual culture it gives that we value it. Integral and universal education, such as Dr. J. B. Buchanan presents it, is another bright and shining light, but the world is hardly able to see that light yet. How we have been wasted is one of the appalling discoveries of the day. What apathy exists about the highest interests of humanity in the average mind! What selfishness pervades society as the rule! Competition rules instead of co-operation; emulation instead of love of excellence; self-indulgence instead of temperance and chastity; robbery and gambling instead of fair dealing. Science is constantly making discoveries that bring the whole world into intimate connection, and the might of great ideas and principles pervade the whole mass as lightning the darkest cloud. The powers of evil are finite,—those of good, infinite; therefore we have foundation for hope. Education is of little worth till it becomes self-education. Freedom alone favors self-education; there fore let our prayer be for freedom,—moral, intellectual, political freedom for all.

HISTORIC ILLUSTRATIONS OF SUPERIOR TEACHING.

BY J. A. REINHARDT, PH. D.

The object of the present paper is to bring forward certain examples of superior teaching, and by a brief commentary on each to show upon what basis of psychology the excellence of such teaching rests.

I.

Professor John Tyndall, while teaching in Queenwood School, had the instruction of a class in geometry. The account which he gives of his teaching and of its results occurs in a lecture before the Royal Institution.[1] He says that "he usually found that Euclid and the ancient geometry generally, when addressed to the understanding, formed a very attractive study for youth. But it was my habitual practice to withdraw the boys from the routine of the book, and to appeal to their self-power in the treatment of questions not comprehended in that routine. At first the change from the beaten track usually excited a little aversion, . . . but in no single instance have I found the aversion to continue. When utterly disheartened, I have encouraged the boy by that anecdote of Newton, where he attributes the difference between himself and other men mainly to his own patience; or of Mirabeau, when he ordered his servant, who had stated something to be impossible, never to use that stupid word again. Thus cheered, he has returned to his task with a smile which perhaps had something of doubt in it, but which nevertheless evinced a resolution to try again. I have seen the boy's eye brighten, and at length, with a pleasure of which the ecstasy of Archimedes was but a simple expansion, heard him exclaim, 'I have it, sir!' The consciousness of self-power thus awakened was of immense value; and animated by it the progress of the class was truly astonishing. It was often my custom to give the boys their choice of pursuing their propositions in the book, or of trying their strength at others not found there. Never, in a single instance, have I known the book to be chosen. I was ever ready to assist when I deemed help needful, but my offers of assistance were habitually declined. The boys had tasted the sweets of intellectual conquest, and demanded victories of their own. . . . The experiment was successful, and some of the most delightful hours of my existence have been spent in marking the vigorous and cheerful expansion of mental power when appealed to in the manner I have described."

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[1] Vide *Payne's* (Joseph) *Lectures on Science and Art of Education*; p. 54.

COMMENTARY.

One obvious principle upon which Professor Tyndall's teaching was based may be described in the words of Sir William Hamilton, which, wherever employed, has been employed with success; namely, the determination of the pupil to self-activity, doing nothing for him which he is able to do for himself.[2] This principle, says the same writer, "which has been always inculcated by theorists on education, has, however, by few been carried fully into effect."[3] As illustrating the neglect of this principle, the Bishop of Exeter says, "We often find that when teachers fancy their pupils have obtained a thorough mastery of a subject, they are deceived, because *they have not noticed that in almost imperceptible ways they have been doing for the pupil what he ought to be doing for himself.*"[4] Hamilton, in referring to the mode of instruction he should adopt, tells his class in philosophy, in the University of Edinburgh, that he regards the main duty of a professor to consist not "simply in communicating, but in doing this in such a manner, and with such an accompaniment of subsidiary means, that the information he conveys may be the occasion of awakening his pupils to a vigorous and varied exertion of their faculties."[5] . . . "Self-activity," says he, "is the indispensable condition of improvement. . . . Strictly speaking, every one must educate himself."[6] He further points out to his class that in his department instruction could do little more than point out the position in which the pupil should place himself in order to verify by his own personal, immediate experience the facts which his instructor proposes to him as true. This last statement might have been made by Prof. Tyndall, himself. He proposed to his pupils a certain theorem as subject to demonstration; his pupils trained to know their powers and how to apply them, reject the solutions of others and work out their own; his students, like Hamilton's, are made to feel "that there is no use *educationally* in being told the results to which others have arrived."[7] "The instructor, therefore," says Hamilton, "proclaims, *οὐ φιλοσοφία ἀλλὰ φιλοσοφειν;* he does not profess to teach *philosophy, but to philosophize.*"[8] And in the same spirit Tyndall taught not geometry, but *to geometrize.* This last word, *to geometrize* recalls a *locus classicus* in Plato,[9] that wherein Socrates undertakes to illustrate the origin of knowledge, and to show the true nature of the art of teaching. Socrates summons one of Meno's slaves and proceeds "to demonstrate on him," gradually leading him, after more than one trial, and after several shocks to his self-esteem and presumed knowledge, to the acknowledgment of the theorem that the square of the diagonal is double the square of the side,—"that famous discovery of primitive mathematics in honor of which the legendary Pythagoras is said to have sacrificed a hecatomb."[10] Socrates has been complaining that there are no teachers, in the higher sense of the word; that is to say, no real teachers who will arouse the spirit of inquiry in their pupils;[11] and very admirable is the whole scene, which is too extended and too familiar to pedagogical students to be reproduced here. The significant remarks of Socrates at the conclusion of this typical specimen of teaching, that (1) he has, as it would seem, only assisted the boy in some degree to the history of the truth, and (2) that without anyone teaching him he will gain knowledge for himself; and finally, (3) that the same method "may be applied with all geometry, and every other branch of knowledge" may be compared with the statements of later writers, with no deduction for the insight and accuracy of Plato.

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[2] *Hamilton's Psychology;* p, 638. [3] *Ibid;* p. 638. [4] Quoted by Payne; Works, p. 172.

[5] *Metaphysics*, Lect. I. [6] *Ibid*, p. 10.

[7] *Stuart*, vide *Payne*, p. 59: "*But the true method of education is to show you a road, by pursuing which you cannot help arriving at those results for yourselves.*" *Ibid.*

[8] *Hamilton: I. Metaphysics.* [9] *Meno, Jowett's trans.*, Vol. I. p. 283.

In the second place, in this teaching of Prof. Tyndall's, there is implied a deeper, though less obvious principle; *i. e.*, that involved in the excellence of what the Germans call *intuitional instruction.* By intuitional knowledge is to be understood knowledge gained by the *immediate presentation* to the mind of the real individual object,[12] whether that object be of the outer world (perceived by the senses) or of the inner world of consciousness.[13] It is evident that *intuitional* knowledge is not of external things only,—not *objective* only, but also *subjective.* Of the latter are the mathematical intuitions, the æsthetic, the moral. The distinction here made and its universality may be illustrated by Mansel's words: "Presentative or intuitive consciousness is the consciousness of *an individual object,* be it *thing,*[14] *act,* or *state of mind,* immediately present before me here or now." Tyndall's students of geometry, in originating their own demonstrations, were conscious of the geometrical ideas involved, and of their relations, *immediately.* These ideas and relations (as much the objects of *intuition* as sense-perceptions) were not "mirrored to their minds in a vicarious representation,"[15] *i. e.,* not through the symbols selected by another mind,—the words of the text-book

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[10] *Jowett's Introduction.* [11] *Meno I.*, p. 293.

[12] *Morell, Psychology.* See *Vocabulary of Phil. Sciences*, p. 282

[13] *German Pedagogy*, p. 381. Trans. of *Diesterweg.*

[14] *Metaphysics*, or the *Philosophy of Consciousness*, p. 33.

[15] *Hamilton: Metaphysics;* Lect. XXIII. Vide also *Fleming's Vocabulary* of *Phil. Sciences, Art, Knowledge.*

The distinction made by Mansel between intuitive and representative consciousness is that of Leibnitz between knowledge as *intuitive* and knowledge as *symbolical*: "When I behold a triangle actually delineated. and think of it as a figure with three sides and three angles, etc., according to the idea of it in my mind, my knowledge is *intuitive*; but when I use the word 'triangle' and know what it means without explicating all that is contained in the idea of it, my knowledge is blind or symbolical."[16] As we may know a triangle either intuitively or representatively, so also may the relations between the conceptions, *i. e.*, the successive acts of reason, be known, either immediately or mediately through language. And this is recognized in the typical series of acts of teaching which we are considering. "It is a principle in the instruction of youth, in universal instruction, also in every activity of the educator, that everything which is to be actively and impassively felt, known, and wished, must have certain events and experiences, and an *immediateness* for its foundation. Shallow perception,—that which is heard, learned, and perceived, according to words,—answers not, develops not."[17] "All instruction, without exception, must be based on intuition." Especially applicable to geometrical instruction, and to the particular instruction we are considering, is the following from Beneke: "The truthfulness, the intuitiveness and efficaciousness of a universal rule originate only from self-experienced, or, at least, clearly represented and impressively felt individual incidents. . . . The child can associate with words only that of which he has an ideal. So long as he fails *to apprehend his intellect and activities*, his sensibilities, the endeavors of his will and his opinions, the words referring to them will be mere empty sounds."[18] It is evident that the pupils of Tyndall did "apprehend their intellectual activities," and that the knowledge gained by the gradual evolution of the demonstration was a pure intuition. We may not know, also, that "Books can show you the instructive method, but cannot give you the intuitions themselves.[19]" With this we may compare the statement of Spencer, that "the function of books is supplementary; they form an indirect means to knowledge when direct means fail,—a means of seeing through other men what you cannot see for yourself." "Immediate cognition is of far greater value than mediate cognition. . . . The words contained in books can be rightly interpreted into ideas only in proportion to the antecedent experience of things."[20] These considerations justify the practical remark of the author of a popular text-book, that in geometry "it depends mainly on the *form* in which the subject is presented" whether the teaching is successful or not. This paragraph, which has had for its object to show the *intuitional* character of Tyndall's instruction in geometry, may well close with a protest against some inaccurate characterizations of literary instruction made on page 159 of the present volume of EDUCATION.* The writer says: "In literary culture we feebly and indefinitely grasp ideas by their association with printed words. There is no life, no force, in the object of our study." "In industrial art we are continually stimulated by the presence of the object and the operations we are performing, and our perceptions are clear, positive, and exact." It is evident to the careful reader that the principle around which the writer's mind is hovering, is the superior character of *intuitional* knowledge,— that gained in the actual presence of the object,— the thing presented being viewed, as it were, by the mind, face to face. But the objects of intuition are not of the external world only. Intuitive consciousness is consciousness of an individual object, be it *thing*, *act*, or *state* of mind. The distinctness, clearness, and immediateness of knowledge, so much and justly praised by our author, is characteristic of all intuitional instruction, and not peculiar to industrial, or other, art. Witness Tyndall's description of the mental status of his students; also Herbert Spencer's account of a similar case of the teaching of geometry,[21] and the like experience of hundreds of teachers everywhere.

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[16] *Fleming*, p. 283. [17] *Diesterweg* on *Intuitional Instruction*, *German Pedagogy*, p. 384.

[18] Quoted by *Diesterweg* as above. [19] *Ibid.*

[20] EDUCATION; quoted by *Quick; Educational Reformers*, p. 147.

A third principle of Psychology recognized and applied in the series of teaching acts we are considering, is that the mind, in elaborating its knowledge, naturally proceeds by the method of analysis, from the whole to its parts[22] and not from the parts to the whole. Thus perception begins with masses.[23] All development is an advance from the indefinite to the definite.[24] In following the demonstration of another, the mind proceeds synthetically, following the trend of thought prescribed beforehand, starting with the definite and particular and proceeding to the definite. But when students construct their own demonstrations, the problem is viewed as whole, and out of the indefinite mass of relations immanent in all the knowledge they have of geometry, they by analysis abstract that which is pertinent to this problem. This is in the nature of an original discovery. A perused, a *recited* demonstration lacks this element; and as a great educational authority has pointed out, there is an immense difference, educationally, between an original experiment and a repeated observation.[25] Again, when an original demonstration is put in words, "the necessity of communicating a piece of knowledge to others, imposes upon us the necessity of obtaining a fuller consciousness of that knowledge for ourselves. This result is, to a certain extent, secured by the very process of clothing our cogitation in words. For *speech is an analytic process;* and to express our thoughts in language, it is requisite to evolve them from the implicit into the explicit,—*from the confused into the distinct.*"[26]

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* Art. on "Moral Influence of Manual Training." [21] EDUCATION, p. 150.

[22] *Hamilton: Metaph.*, p. 498. Also, "Now this is what appears to me to take place with children. They first know,— they first cognize,— the things and persons presented to them as wholes;" p. 499.

[23] *Ibid.* [24] *Spencer*, vide *Quick; Educational Reformers*, p. 230.

For the present our inquiries cease. The attempt to refer the excellence of this teaching to an underlying principle or principles is not exhaustive. Many elements of comparison have not been alluded to; the general conclusion may be again stated, however, that the great question of education, as of philosophy,[27] is that of *method.*

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[25] *Todhunter: Conflict of Studies*, p. 17.

[26] *Hamilton: Logic*, p. 481.

[27] *Morell: History of Modern Philosophy ;* the concluding reflection.

WOMEN IN LONDON UNIVERSITY AND IN UNIVERSITY COLLEGE.

BY SARAH K. BOLTON.

England deserves hearty commendation for what she has done for the higher education of women. Cambridge has been liberal, Oxford is following, but London University is the first great institution to give degrees to women. Of course this has been gained, like all other progress in civilization, only after persistent effort.

Queen Victoria set another jewel in her crown when, on March 4th, 1878, she proclaimed, "that we do by virtue of our prerogative royal, and of our special grace, . . . will, grant, and ordain, that all the powers and provisions relating to the granting of degrees and certificates of proficiency . . . shall henceforward be read and construed as applying to women as well as to men."

The University buildings, 250 feet long and 150 deep, are in Burlington Gardens, and it has been justly said are the finest modern examples in England of enriched Italian architecture. The front has two square towers, between which is a projecting portico, with five entrances. The portico, center, and wings are all surmounted by ornate balustrades, on the pedestals of which are statues of such men as Newton, Milton, Plato, Aristotle, Goethe, Locke, Bacon, Harvey, and Davy. Her Majesty opened the buildings in person in 1870. Earl Granville is the chancellor, and the senate is composed of such men as the Duke of Devonshire, Earl of Derby, Sir John Lubbock, Sir William Jenner, Sir William Gull, J. G. Fitch, Esq. (whose valuable lectures on teaching are used as text-books in some of our colleges), Dr. W. B. Carpenter, and others. The University is in reality a great examining body for some fifty or more colleges. The curriculum is not second to Oxford and Cambridge, and in some respects superior. The medical standard is believed to be unsurpassed. Such renowned scholars as the late Professor Stanley Jevons are examiners in mental and moral science; Professor E. Ray Lankester, in comparative anatomy and zoölogy; and Professors Henry Morley and A. H. Ward, in English language, literature, and history.

In 1879 a lady took honors in Latin, standing in the first class, and also honors in English. To obtain the former, a student must pass an examination for three days of six hours each, in Plautus, Terence, Lucretius, Virgil, Horace, Juvenal, Persius, Cicero, Livy and Tacitus; be able to put English into Latin as well as Latin into English, and answer any question in analysis. Previous to this, he or she must have passed the Bachelor of Arts examination in all its subjects,—arithmetic, algebra, geometry, trigonometry, Latin, Greek, either French or German history, English language and literature. When it is remembered that only two or three out of hundreds stand in the first class, the scholarship of the lady above-mentioned is apparent.

In 1880 the only two in the first class in honors in French were ladies. In the same year, in honors in German, one young lady and four young men were in the first class. All these cases prove that women can excel in the classics. "They may be linguists, but they can never comprehend mathematics." Miss Scott, who sometime since was eighth wrangler at Cambridge, in honors last year at London University for Bachelor of Arts and Bachelor of Science conjointly, took a first class in mathematics. This means an examination for eight days of six hours each in arithmetic, algebra, geometry, trigonometry, mixed mathematics (the composition of forces, mechanical powers, laws of rectilinear motion, and the like), inorganic chemistry, experimental physics, acoustics, heat, magnetism, electricity, optics, general biology, besides a three days' examination for honors in algebra, plain and spherical trigonometry, pure and coordinate geometry, up to and including conic sections, differential and integral calculus, statics of material particles of rigid bodies, etc.; kinetics of material particles, and hydrostatics of gravitating fluids. Other ladies have taken honors in this branch of study. Evidently, then, women may attempt mathematics.

In honors in law, in 1880, Miss Orme stood fourth in the University. A lady has taken the first honor in botany. Several have stood in the first class in mental and moral science, which seems to be a favorite study with them. As this includes psychology, logic, and ethics, we shall sometime cease to hear that women judge intuitively or by instinct, and shall come to regard them as reasoning human beings. A lady has gained the gold medal in anatomy, one of the most coveted prizes in the medical profession. Another has taken honors in the first division as Bachelor of Medicine, won the gold medal and scholarship in obstetrics, and stood in the first class in Forensic Medicine. Facts like these destroy the arguments against women's ability to become physicians.

Mr. A P. Hensman, of London, writes to the *Standard* that, at the recent Bachelor of Arts examination in the University, there were 237 candidates, of whom 215 were men. Of these 42 per cent. obtained the degree. Of the 22 women who presented themselves, 73 per cent. were successful. While 27 per cent. of the men were placed in the first division, 68 per cent. of the women were found there. "More than one in every three of the men who obtained their degrees was in the second division; only one of the sixteen women who became graduates failed to be placed in the first division. Upon inquiry I found that the average age of the women was not higher (probably it was slightly lower) than that of the men."

The injustice of not giving degrees to women when fairly earned, and of not providing equal school-opportunities for them, after they have shown equal ability, must be admitted. Nor are those women exceptional who have both the ability to learn and the desire for it. So great is their number that the present institutions cannot equal the demand. Girton College, at Cambridge, has just expended $75 000 for more buildings. Somerville Hall and Lady Margaret's, at Oxford, have been greatly enlarged. University College, on Gower street, London, has just built a Hall of Residence for Women. Mr. Holloway's million-dollar College for Women, not far from Windsor, is nearing completion. The movement for the higher education of woman seems to have reached every corner of Great Britain. One of the most efficient agents in this matter is the "Women's Education Union," formed in 1870, with the Princess Louisa as president, and Mrs. William Grey and Miss Shirreff, invaluable secretaries. The central office is at 112 Brompton Road, London, S. W. The Union has raised scholarships to assist girls desiring the University examinations, established twenty-one large day-schools for girls, watched legislation respecting education, and published the *Monthly Journal*, which disseminates information.

I do not know of a University in Great Britain which has not a "Ladies' Education Association" at its very doors. These organize classes, with the University professors as instructors, and with examinations as nearly like those at the universities as possible, that a correct standard of proficiency may be obtained. Scholarships and prizes are offered. Of course it not infrequently happens that professors, seeing that it is usually a waste of time and labor to give the same lecture twice simply because the listeners are of different sexes, unite the classes, and co-education results without harm to anybody.

Oxford, Cambridge, Edinburgh, Glasgow, St. Andrews, and others, have each most useful ladies' associations. Edinburgh University gives to women both pass and honor certificates in arts. A curriculum for four years, similar to the course for M. A., is recommended. Dublin University gives certificates of honor. A Trinity College junior scholarship of $100 for one year is awarded the junior candidate who stands highest. The winner pursues her studies for one year at some place of superior instruction, approved by the Board of Trinity College. Doubtless the best place of all would be Trinity College itself! St. Andrews, the oldest University in Scotland, founded in 1411, with the Duke of Argyle, chancellor, gives to woman pass and honor certificates, the standard for both being the same as that required for an M. A. degree. Sometime, probably, seeing that the pass certificate and M. A. degree mean the same thing, the latter term will be used; and why not? Any candidate who passes in four subjects,—one being a language,—or gains honors in one subject and passes in two more, receives the title of Literate in Arts (L. A.).

England is not the only nation coming to the front in higher education for women. At Upsola, Sweden, I found women having equal opportunities with men. At Zurich the advantages are admirable. At the Sorbonne, in Paris, I was told that women who desired its lectures were usually Americans, but I saw several French women there also.

University College, which was formerly called London University, was founded in 1827 by Thomas Campbell, the poet, Hume, Grote, Zachary Macaulay, the father of the historian, and Lord Brougham. No Dissenter being admitted to Oxford or Cambridge, it was thought no more than just that Congregationalists, Baptists, Presbyterians, and Methodists should have an opportunity to become educated. Campbell called the founding of this college the chief event of his life,—the pleasures of hope realized. The building is a classic structure, four hundred feet long, with wings,—the masterpiece of William Wilkins, R. A., the designer of the National Gallery. The center is an immense Corinthian portico, reached by many steps, surmounted by pediment and dome. In the great hall beneath this are the principal works of John Flaxman, the sculptor, which will well repay a visit. The museums of natural history and anatomy, and the library of over 68,000 volumes, are valuable aids to study. The buildings have cost already probably a million and a half, and another half-million is now being used in extensions and improvements. Aside from the fact that this college numbers among its professors such well-known men as Henry Morley and E. Ray Lankester; that it has one of the best medical departments in the country, with hospital attached, where 15,000 persons are relieved annually; that its junior school for 700 boys has never, from the first, allowed flogging or fagging, both of which, unfortunately, are permitted at the great public schools like Eton College; that its department of engineering and mechanical technology, with evening science classes, are most valuable; aside from all this, University College is especially noted as one of the leading institutions of Great Britain, which has tried co-education with the most complete success.

It was to be expected, perhaps, that a college established for the purpose of giving freedom in religious thought would take advanced ground for woman. In this matter, however, Professor Morley says, from two courses of lectures given to women in some rooms in Harley street, " we advanced, feeling our way to six in St. George's Hall, still with success. Meanwhile there had been advance enough in public opinion to enable us to suggest that, for convenience of access to apparatus necessary for experiments, certain scientific classes should meet in the college. The next year (1871) we had three classes instead of two within the college. In the following year (1871–72) we pushed boldly on; with the consent of the council of the college, brought all the classes into our own lecture-rooms, and suddenly increased the number of the subjects taught from eight to twenty-one."

A century from now, how strange it will be to read that there existed a prejudice not only against women receiving higher education with men, but against their receiving it at all! How gradually we are learning that the best education possible of attainment for any human being makes the best home, the best citizenship, and the grandest civilization!

In Latin, Greek, French, German, archæology, English languaye and literature, history, philosophy, logic, political economy, mathematics, physics, geology and mineralogy, Roman law and constitutional law, young men and women, are in the same classes. In chemistry, zoölogy, botany, and physiology, which are included in the medical department, the classes are separate. Women are not admitted to the study of medicine at this college, Public opinion would change, I think, could the educated visit Boston University or some other well-conducted institution in our country.

Of the 1,911 students in University College, 300 are women. The plan has worked well. Boys who used to be loud in the halls, and knock off hats, have ceased to be rude. Girls have lost none of their womanliness, and have gained in strength of mind. I visited their debating society one evening, and heard some addresses which would have done honor to persons much their seniors.

" Do not the students fall in love with each other?" I asked, recalling to mind the two overwhelming arguments of the opposition: the one that if women go to college where men are, they will lose their hearts, and thus their heads will be useless for study; and the other, if they go to college where men are not, they will not graduate till they are beyond their teens, and thus miss their best chances for marriage. "One couple did marry," said the professor; "but I believe they met in childhood before they came here,"—so the college was not to blame for this catastrophe. The expectation that a young man would not be able to recite Greek audibly for fear of failure, where there were young ladies, has happily not been realized.

The Slade Art School in connection with the college is one of the best in the kingdom. Both sexes work together in all save the life-classes. I am told that the young ladies usually have the front seats by courtesy of the gentlemen. Genuine politeness is good for either sex. The college has several scholarships and prizes. In fine arts two were given in 1883 of $250 a year for three years; one of these to a lady. The political economy scholarship of $100 a year for three years was also awarded to a lady; to another a scholarship of $125 and a silver medal for proficiency in German. A large number of University College students have taken degrees at London University.

Bedford College in York Place, London; Queen's College in Harley street, and Cheltenham Ladies' College are also good sources of supply for London University. In connection with these three institutions are the names of A. W. Bennett, B. Sc., F. L. S., well known in botany; Principal J. Llewelyn Davies, and Miss Beale, who deserve to be held in grateful remembrance for their aid to woman's education. Cheltenham, where Miss Beale is principal, has so enlarged that there are now forty-four English teachers, seven foreign, and twelve musical. The college has ten boarding-houses, besides the Students' Home.

A CLASSIFICATION OF KNOWLEDGE.

BY GEO. P. BROWN, TERRE HAUTE, IND.

In this essay to make a classification of knowledge, an attempt is also made to justify, in the main, the present curricula of study in our common schools and colleges, and to suggest some principles that should be employed in determining the limits that should be placed upon the study of the Greek and Latin languages.

Knowledge is those products of sense-perception, reflection, the understanding, and speculative insight, that are true,—*i. e.*, that correspond to the reality. The products of these faculties may be of the character of knowledge, or of belief, or of opinion. It is not easy to make an adequate statement of the distinguishing marks of these groups of products. The following is the result of an attempt to define each :

1. Those ideas and judgments whose ground of certitude is sufficient for all intelligence, are knowledge. Knowledge must be always in accord with the reality. The objective truth made subjective by the individual mind is knowledge. Knowledge is therefore both subjectively and objectively valid.

2. My conceptions and judgments are *belief* when the ground of their certitude is subjectively sufficient, but is not seen to be necessarily valid, objectively. This ground is valid for the individual intelligence, but is not valid for all intelligence. "Belief is the thinking of reality, which is determined by grounds not necessarily valid for all intelligence, but satisfactory for the individual thinker."

3. These mental products are opinion when there is neither subjective nor necessary objective validity in the grounds of their certitude. The individual mind that entertains an opinion is conscious of the existence of grounds for doubt respecting its truthfulness. Opinion may correspond with the truth, but it cannot be knowledge.

Dr. Porter defines knowledge to be the certainty of the existence of a thing in its relations to other things. Immediate certainty of the existence of a thing is no adequate knowledge of it. It is only when this certitude is modified by the varied relations that only reflection can discover, that the thing is known in its entirety. All truth is organic. Hence knowledge is organic. The sum of all knowledge is a whole of inter-related parts, and each part of this totality has no valid being except as related to the whole. This unity must, therefore, be the unity of a system. Until a thing is known as a part of a system of things, my knowledge of it must be incomplete and relatively false. Whatever is adequately known must be scientifically known. Its place and use, in the whole of which it forms a part, must be apprehended.

If this definition of knowledge holds, then I must seek some basis of classification which will recognize the inter-relation of all these products. In my study of this theme, the only adequate source which I have been able to discover of the ideas that are found expressed in nature, as well as in the world created by man, is intelligence. The ultimate source of the ideas in both worlds seems to be the same. To this is attributed their unity. It is from this point of view that the present attempt is made to discover a classification of knowledge.

There seem to be three realms of knowledge: (1) the world of nature; (2) the world of man; (3) the realm of presuppositions, fundamental conditions, or *a priori* ideas, which make both these worlds logically possible. This last is called the metaphysical realm. The first and the last are thought to be the direct products of the Absolute Intelligence. The world of man is his product, but it is one degree removed. Man is the medium through which the world-spirit finds expression.

Man has discovered several distinct sciences in the world of nature, and has constructed many in his own realm. That system of ideas which considers the presuppositions of things in these other regions is called Philosophy. Science is the knowledge of the creations of the Absolute Intelligence in the world of nature, and of the creations of human intelligence in the world of man. Many different groups of ideas have been put forth as sciences by individual minds, which have never been able to prove their claim to such distinction. This is because of the tendency of each individual mind to pronounce that valid for all intelligence which is valid for its own. The increase of intelligence arising from the progress and general diffusion of knowledge has remanded many of these to the realm of individual opinion, to which they belong. Others, which now have some currency as sciences, are slowly approaching the same fate.

The study of nature has revealed two distinct groups of ideas belonging to the organic and the inorganic worlds. These two worlds differ in that there is a higher degree of organization in the one than in the other, rather than in the total absence of organization in either. The lowest forms of creation, considered in relation to organization, are Time and Space. These are lowest in the other sense, that they form the condition of all other creations. They are organic in the sense that each is made up of parts that severally exclude every other part. And since each part continues every part which it is conceived to limit, it follows that the wholes of Time and Space are self-limiting wholes, or infinities. They are self-determining to this extent, that each part excludes every other part. This gives that physical property known as impenetrability. This principle of exclusion makes possible the sciences of Mathematics, which are the fundamental sciences of the organic and the inorganic worlds. The varied relations of the parts of space to one another constitute the science of Geometry. Number originates from the succession of parts of time. The relations of numbers constitute the science of Arithmetic. All of the other mathematical sciences are but applications of the principles of these, separately or in combination. These sciences are exact because of the fewness of the ideas involved. The human mind can come nearer seeing *all* the relations of one part of space to every other, or of one unit to all other units, than of a part in any other realm of creation to the other parts of that realm.

Space and Time are the primary conditions of all finite existences. Without space no object of nature could be, and without time it could not endure. At the threshold of our study of nature we find the mathematical sciences which are to serve as a key to the discovery of the other sciences. Given *mind*, *time*, and *space*, and the science of pure mathematics results. Put into time and space the elements of nature, and the forces of gravity, cohesion, and chemism, acting under the laws imposed by time and space, will produce the analytic sciences of Physics and Chemistry. These forces also unite these elements into bodies, and the application of mathematics to the action of these forces upon bodies gives the sciences of Astronomy, Meteorology, and Geology. In these latter there is an easily discerned organization of parts and movements of the bodies which justifies the name organic or cyclic sciences. Everything moves in a regular circle of change of greater or less circumference. Is there any less definite organization of movements in the insensible, elemental world of nature than in the sensible world of bodies? If not, are the words *organic* and *inorganic*, as applied to sciences, to be literally interpreted?

The practical value of the mathematics is, that by them we are enabled to measure the quantities and movements of bodies; hence the great number of different sciences in the applied mathematics.

There is another realm of nature, — that of life. The life-energy, acting upon matter in conjunction with the forces previously considered, produces a new order of beings called living organisms. Biology is the science of this realm. There are two groups of biological sciences. One of these treats of the structure and functions of the different organisms. Vegetable and Animal Anatomy and Physiology constitute the group. The other group embraces the sciences of classification, which are Botany, Zoölogy, and Anthropology. To this class we may assign that hybrid science known as Geography. In all these realms of living or dead organisms the number and variety of the ideas is so great, and their relations are so complex, that knowledge has less of the character of demonstrative certainty, and hence more that is merely opinion passes current for science.

There is another department of Nature,—the spiritual man. Man is a spiritual being, having a spiritual nature; by which is meant that man as mind is a being whose actions in every department, except that of will, are performed in obedience to natural laws as fixed and necessitating as those which the body obeys. We add then to our list of natural sciences the science of the human soul.

What justifies the presence of these sciences in our courses of study?

1. They are of value for the knowledge obtained of the processes and products of the natural world. Man's primary needs are food, clothing, and shelter, and these must be obtained from nature. The ease and certainty of their acquisition will depend upon his knowledge of these processes and products.

2. They are of even greater value to the spiritual than to the physical man. Mathematics gives exercise and growth to the logical powers, and teaches the fundamental principles involved in all processes of reasoning. The inorganic sciences cultivate the power of correct observation and experiment, and afford an excellent discipline in inductive or probable reasoning, which is of great practical value in the affairs of common life. The organic sciences render yet greater assistance in the mastery of the inductive method by the emphasis they place upon the importance of correct generalizations, and the practice in sharp discriminations which their proper study enforces. Man will be best prepared for life through a thorough study of the natural sciences, whether that life is to be spent in a search for wealth or a search for truth.

The inductive method of reasoning employed in gaining a knowledge of natural history and physics is popularly known as the "scientific method." The educational air is resounding with this phrase, and I beg the indulgence of the reader in turning aside to speak of it. It seems to be thought by many to be a panacea for all educational ills. It is to be applied everywhere. It is a method adapted to the discovery of natural sciences, but it is not for that reason the best method for the discovery of historical or metaphysical truth. The nature of the method of learning a science will depend upon the nature of the method of the science itself. But the scientific method *par excellence* is not the method by which the learner comes into possession of what the race has already discovered, even in the realm of nature. The purpose of the teacher of science should be two-fold: (1) To bring the student on as rapidly as possible in the knowledge of what is already known. (2) To so do this that power will be developed and a method learned by which the student can go on by himself to the verification of other discoveries, or to the discovery of new truth. The "scientific method," if it means anything that is distinctive, must be the method of original discovery in the realm of natural science. The student cannot pursue this method profitably until he knows what has already been found out. The scientific method of learning what man has already discovered in nature does not differ in its fundamental principle from the common-sense method of learning what has been found out in other realms of knowledge. The perennial method of doing this in every department of knowledge is from a statement of a truth, more or less clearly apprehended, to the verification of that statement. When the student becomes a discoverer in earnest, then his method is by hypothesis and experiment to test its validity. The only difference between the two is, that hypothesis in the latter case is used instead of statement. But to proceed by this method from the start would prevent the student from ever arriving at the limits of knowledge already acquired, because of the shortness of life.

Man has a world of nature made for him, which is ever inviting him to explore its mysteries. He has a scarcely less wonderful world made by himself. Being in the small and finite, what his Creator is in the infinite, his own creations must be like those of the Absolute Intelligence in this, that they will consist of a concatenation of ideas so related as to give them the characteristics of a science.

Man is a being endowed with the three-fold power of intelligence, feeling, and will, and capable of developing the three-fold character known as theoretical, æsthetic, and practical or ethical. As a practical or ethical being, he has created States, built cities, organized business and social society, carried on war, done what his nature and his age prompted. And he has done what he has done in either conscious or unconscious obedience to those laws of his being implanted by his Creator which have determined the process of his development, and have given the history of his achievements a place among the sciences.

I am aware that to class the history of man's deeds among the sciences is to fly in the face of grave authority, which reasons from the freedom of the human will, that there can be no such necessary concatenation of ideas resulting from its activity as belong to a science. But while the human will is free, it is not purposeless in its action. The history of the race shows that it has in the main been ever true to the one purpose, the realization of freedom. The idea has been imperfectly conceived, but each age has been true to its conception. This obedience to the law of one unchanging purpose introduces that element of necessity into human history that gives it the character of a science. Is it not true, indeed, that the natural sciences are but the history of the deeds of Absolute Freedom acting in obedience to a purpose?

As a theoretical being, man has made languages and the different sciences of language and of thought. As an æsthetic being he has produced Literature and Art. These recount the history of the subjective struggle of the race for freedom.

Man the doer, or ethical being, has made history the science of Government, Political Economy, Jurisprudence, Sociology, Ethics, and the numerous sciences subordinate to these. Man, the thinker, has made Languages, Grammar, Logic, Philology, and the like. Man, the portrayer of himself in sensuous forms, the representer of the ideal by the visible and real, has expressed himself in Architecture, Sculpture, Painting, and Music, in one field; and in Poetry, the Drama, the Novel, and whatever else belongs to literature, in another.

Man is, above all, a religious being. This nature expresses itself in worship of a Supreme Being. In so far as the principle determining this expression is faith in supernatural revelation, it can receive no consideration in a classification of knowledge. But in so far as a rational insight into the first principle of things and into the nature of the Supreme Being determines this expression, it belongs to the department of knowledge. We now enter the realm of *a priori* ideas, and discover here a science of the principles of the other sciences, which we call Philosophy, or the Science of Sciences. Investigation in this realm reveals to man, God, and immortality, and thus gives the rational basis for religion.

What shall be said of the educational value of the second region of knowledge, the world of man? I will not ask the indulgence of the reader further than to make a very few general statements covering the entire realm, and a few less general ones respecting the study of the Greek and Latin languages.

It is the province of education to lead the individual to realize in himself the thoughts and experiences of his fellow-men. No one questions the practical value of his so realizing the thoughts and experiences of his own generation. To this end exist the book, the daily paper, the magazine, the railroad, the telegraph, and the telephone. All children are sent to school that they may become familiar with the chief instrumentalities by which the thoughts and experiences of others are conveyed, and with that common stock of ideas and experiences that are of daily use in man's intercourse with his fellow-man. So they are taught to read, to spell, to write, to construct discourse, to cipher, the history of the nation, the form and principles of its government, geography, the elementary principles of the natural sciences, drawing, business forms and rules, and good behavior. But every earnest soul, whatever his condition in life may be, wishes to know something of himself more than his family history can give. He would know where he came from, and how he came to be what he is. Facilities for gaining this knowledge are so cheap and so abundant that the poorest and busiest of men and women need not despair of gaining much of it. All that is needed is, that there be a desire to know.

Each one is in a great degree what his race has made him. He has been coming down the stream of time in the persons of those who have made history. He can know himself, therefore, only as he can come into the knowledge of their lives. Those lives are embalmed in history, in literature, and in art. What is noblest and best and worthiest to be preserved is there. He who is able to enter into and possess that inheritance has passed out of his mere individualism and has found himself in his race. He has become the race in so far as its life is consciously realized in himself. History has embalmed the deeds of men. Literature contains their best thoughts and noblest aspirations. Art has preserved man's conception of himself in sculpture, painting, architecture, and music. Education in history, literature, and art can do much toward removing the scales from one's eyes, and putting him in the way of obeying that Delphic injunction, "Know thyself."

I come now to consider the relation of language-study to education. The history, the literature, and much of the art of the race are embodied in language. The natural sciences are embodied in the objects of nature, which are perfect sensuous expressions of them. The sciences of man have that artificial embodiment of language. In this creation of a medium for his conceptions, man is naturally impelled to give to it a scientific form and character. As a science it is worthy of study, and no one who is properly informed and is honest with himself will deny the disciplinary value of a scientific study of any language, and especially of those that are most finished and complete. But it is a question which experience has not yet answered satisfactorily, whether the value of the study of the science of language is commensurate with the study of the sciences of nature, or those other systems of ideas which constitute the history and literature of the race. Language is an instrument constructed for a purpose,—a beautiful instrument, it is true, but valuable for the end it fulfills. It is what is embodied in it, and not *it*, that man needs most to know. But the language must be known if I would know what it expresses. The learning of a new language for the thought expressed in it must be largely a matter of memory. It is a learning of new symbols for ideas. There are found to be certain laws that govern the groupings of these ideas into phrases and sentences. The application of these laws in complicated constructions gives exercise to the powers of discrimination, comparison, and judgment; but still, if the end of learning a language is to come at what it embodies, then memory must be the faculty chiefly exercised. Having once mastered the language of a people, one has an indispensable aid to the complete mastery of the thoughts and experiences of that people. No translation can equal the original language in giving expression to these. This must be so, for the reason that languages are the spontaneous products of races, and, therefore, the best expression of their thoughts. If I would come into a full experience of the Greeks, as portrayed by Homer, I must become a Greek in language. The same is true of the Latins, or of any people. He, therefore, who would master the great literatures of the world must master the languages in which they are contained. Without a knowledge of the language, equal to that possessed by those who wrote in it, he cannot see what they saw. For such the study of Latin and Greek will increase in this country as time goes on. Wealth will bring leisure, which the scholarly-inclined will improve in classical study. Instead of the meager results from our present teaching of the classics by teachers ignorant of the language, there will be those who are as familiar with Greek and Latin as with their own speech. One of the chief causes of the poor results of classical teaching to-day is the lamentable incompetence of those who teach them.

Those who cannot, or will not, make such a mastery of these languages must be content to rely upon translations for their knowledge of what Greece and Rome said and did.

There is, however, a reason for an elementary knowledge of the

Latin and Greek languages by those who may not have the time or the disposition to obtain this higher culture, but who wish, nevertheless, to know the literature of our own race, and to become intelligent Americans. There are more than twice as many words in our literature of Latin as of Teutonic origin. These words had in the original Latin a concrete meaning. But he who knows nothing of the Latin is unable to seize this meaning, and so make the word suggest a concrete image to the mind. The Latin derivative remains a bald abstraction to him. How much more vivid is the conception, when "tribulation" suggests a threshing-floor, or "comprehend" a seizing hold of many things at once, or "sustain" a pillar supporting a building, than when these words are viewed merely as arbitrary signs of abstract ideas! Abstractions can find their real meaning only in the concrete things from which they are generalized. And when the word suggests this concrete image, the thought is more vivid and more enjoyed. But an elementary knowledge of Latin, properly taught by teachers who know the language, will serve to give the reader the power to animate these dead forms.

I believe that in the near future more, instead of fewer, people will have an elementary knowledge of Latin, and possibly of Greek; that fewer persons who have no desire or intention to master these languages for the higher culture that may be thus obtained will spend six or eight years in the study of them; that those who have taste and leisure, being relieved of the incubus of a class of students who have not, but who are hanging on to the classics for the greater honors of graduation-day, will pursue these languages to their complete mastery. In that day the net beneficial results from classical study will be much greater than at present.

But as long as the "sense of conduct and the sense of beauty" are deemed worthy of the highest cultivation, literature and language will have a prominent place in every curriculum of study having for its end general culture.

PROPOSED ADDITIONS TO, AND SUBTRACTIONS FROM, OUR EDUCATION.

BY REV. GEORGE F. MAGOUN, D.D.,
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Like every other factor and instrument of human well-being, and like well-being itself, education can advance only by addition and subtraction. Substitution is only addition and subtraction in one,—the bad going out and the good coming in; the good going out and the better coming in; both going out and the best coming in. Carry this clear out and clean through, and you have a perfect condition of things. All elements of progress, then, are under this law of addition and subtraction. Only the question ever rises with each, Will it help us on? And nothing but "wisdom is profitable to direct." Some things superior, but not indispensable, may at times be displaced to advantage by things inferior even, but just then more fit; while things essentially necessary to cultivate, we can dispense with only to our great loss, or the destruction of education itself. The true teacher "brings forth things new and old," like the sagacious statesman, the genuine reformer, the keen philosopher, the just and sure moralist, and "the scribe well-instructed unto the kingdom of heaven."

We pass beyond, then, a multitude of engrossing and important questions here,—questions of examination and marking, which leave the volume of what one is examined in and marked for untouched, —questions of the district and superintendency systems, beyond which are the real ends for securing which the districting and superintending are to be done,—questions of normal and joint education, which, when decided, the curriculum of study survives unharmed, and yet to be honestly and adequately mastered by our girls or our boys, our boys *and* our girls, under teachers professionally trained or unprofessionally, and a hundred growing questions besides.

My subject now lines itself out and hedges itself in. It gives me some things to discuss that touch the matter of education rather than its relations, methods, or processes,—what to teach, instead of how to do it. The latter topic would be more exclusively professional, and perhaps of secondary interest here. One need not, I think, delay to distinguish between the matter of education and the matter of learning or knowledge, Only we must bear in mind that at every stage of human advancement, the latter is to govern the former, — with some reaction of this upon that. Certain things that must be taught in every age, everywhere, retaining their places,—the additions at large to human knowledge both of what is in nature, and of what man has done, control the additions, subtractions, and substitutions in education.

SUBTRACTION OF ORTHOGRAPHY.

I. We strike a ready example, close at hand, in certain proposed changes in the spelling and writing of our mother-tongue. To discuss them in detail does not now lie in our way. It was inevitable that some time a language loaded deep with such ingenious, heterogeneous, and often inexplicable anomalies should be challenged to a simpler, symmetric, and systematic construction of words. Such corrections, even in pronunciation, as are made by good dictionaries would lead to this. Acquaintance with the better written languages of other races, and the comments of those to whom they are native, upon the difficulties of ours, would constantly bring up the question of reform. The growth of literary occupations would stimulate changes. Advances in philology, lexicography, and lexicology would make it pressing. Ere long two great facts could be make to strike the popular apprehension,—as I judge they do more and more to-day, —the waste of time in writing silent letters, and the difficulties in learning to spell correctly from immense irregularity in the use and power of letters that are not silent. Not only foreigners, but even native Englishmen and Americans, possessed of that innate aptness for good spelling, which is almost a form of original genius, find faultlessness impossible.[1]

But the question, how English shall be spelt, seems to me less important than the question whether it shall be spelt at all. Good spelling, apparently, depends upon really spelling. Has it not of late been falling back among "the lost arts"? Rush speaks of "that condition of syllabification which constitutes in part the prosodial superiority of the Greek." We shall have to admit the inferiority of English prosody, but are not "syllabification" and syllabication (the latter one syllable shorter and easier), in both name and thing, largely unknown in this generation? So good a college as Amherst has of late years conditioned more than half its candidates for admission,—some forty-five or more,—on orthography. To boast that colleges this side of the Hudson or the lakes had done less, would be only to confess less vigilance as to the all-important elements of education; and I will confess at once that in the oldest college in Iowa we have found it our professional duty and our necessity to provide special classes in orthography for classical academy students, young ladies of the "first year," and freshmen. Such humiliating necessities are laid upon higher institutions, plainly, by failure of good work in the primary schools, public and private, from which candidates for admission come. I have seen a great change in this respect since I enrolled myself among teachers, forty-three years ago, in a New England district school, teaching *varia et omnia*, from the alphabet up. The time was when plain Yankee parents, pretending to little "edication," tested their children at home in *Webster's Speller* as to their capacity to construct separate syllables and put them together, testing their teachers also in the same operation; and if the children failed in a few instances,—as I have heard multitudes fail since in a great many,—reported the teacher to the school committee as incompetent, and opened a spelling-school at home. Early in the rebellion the "contrabands" who flocked into Washington City were trained to read by missionary teachers as well as the case would allow, and I often heard them taught the sounds of whole words printed large, without any instruction in the powers of letters or the sounds of syllables. The question has often risen since, whether what was dire necessity for fugitive slaves was not becoming in some quarters choice for white children of the North. It is one strong recommendation of the "spelling reform" that in reducing anomalies of any or all kinds it will render orthography to long-suffering instructors and pupils easier. Let us use fewer letters if thereby we can come to use them right. Let us give them sounds a little more uniform, at least, as is done in other languages, if so our children and pupils can a little better know what they mean when combined with others. Let us make "English as she is spoke" somewhat more nearly agree with English as she is writ, if we can do so without spoiling, or too largely rendering obsolete, the priceless literature imbedded in our dear old abominable orthography. But whatever usage is in our native speech, let us teach it; let us insist that it shall be taught, whether worse or better, whether it employs fewer letters or more, and in whatever way it employs them. Elaborate etymologies are for the scholar,—some of them for the very advanced scholar alone; but as long as the art of reading in our mother-tongue is the key to all the other arts and to all learning hived up in it, and as long as grammar and rhetoric rest upon orthography, we can let any other branch of common schooling slip better than this. As spoken, words will always be compounds of sounds; as written, of letters. Of what use are "mammoth" sales of dictionaries, and a copy of *Webster's Unabridged* in every school-house and every college recitation-room, if educated persons blunder habitually in communications written for the press, or in letters to their friends? It would be a revelation to the American people if they could be told how much of the verbal correctness of the speeches of members of Congress is due to proof-readers in printing-offices. When these speeches are about to be made it is too late to put the authors through the Speller; it should have been done, thoroughly done,—spite of whatsoever boyish reluctance or impatience or complaint,—in the primary school. To be sure, it is only here and there, perhaps, that the silent subtraction of this essential element from the matter of education is expressly defended; but the mischief done by it is in the loss of that for which there can be no substitute in the nature of the case.

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[1] Spelling (the young people examined) are very defective in: that I know from the University of London, because all our examinations are conducted in writing, and the answers are frequently very badly spelled"—*Dr. Wm. Smith, Examiner.* "The examiner at Oxford states, of a large part of the undergraduates fresh from the grammar schools, that an absence of ordinary facility in spelling is among the unhappy characteristics of the class."—QUAINE, "*On some defects,*" *etc., pp.* 42–43.

ADDITIONAL TEACHING OF DUTY.

II. Certain proposed additions to our education may be grouped together under the head of the teaching of duty.

First: Of duty as such, of right and obligation as the bed-rock of character. Every consideration in favor of teaching anything from the outset, in that mobile, ductile, plastic time, when habits of muscle, nerve, thought, sensibility, will, are forming, is a double argument for moral training in that very time. Shall conscience be supreme in a young nature, if everything else is allowed to get the start of it? Can it become the constant guide of all its action if, for a moment, its relations to any form of action are left out? Of what value is he or she from whom my child gets a bias in favor of the multiplication-table, of the elements of good grammar, of the due shaping of letters by the pen, of the chief facts about the earth we dwell on, and no bias in favor of righteous conduct? Humanity, wonderfully variable in its accidents, is unyieldingly unchangeable in essentials, and God and goodness have no accidents. "For right is right, since God is God." Conscience and integrity wait yet, as they always waited, for that power in young souls which legitimately goes with their supreme prerogative. Why do I want anything else developed in my child, if the moral nature be not brought out first and most? It is conceded that this should be so in private schools. They are often preferred because it is conceded. Yet above all things, in the most secular view that can be taken of them, our public schools, from the primary up, should be seminaries of morals. Perish all our improvements, however real or precious; banished into forgetfulness be the most advanced methods, be they ever so skillful; blotted out from human apprehension be the most brilliant gains of science and the most perfect work of literature, if this must be in order to prevent our future men and women from ignoring or thinking lightly of the distinctions between what ought to be and what ought not. Concretely, of course, and by simple, arresting examples, these distinetions must be impressed upon the little ones; and this, I judge, is better done in their case than with those who are older. They are in the hands of female teachers first, and it is hard for a woman to forget, even if she be very young and crude,—harder than for a man in a primary school,—that measure of propriety and right without the possession of which she is unfit to teach at all. I applaud every utterance on moral education which insists upon the necessity of the thing; I have a quick and profound interest in the joint effort to produce an acceptable manual of ethics from which it is to be hoped the happiest results will soon appear; but I apprehend that our solicitude is not directed to the right point. The young men who fall off from morality when they enter college or commence some practical pursuit, do so not for lack of earlier moral training, but of later. Hardly can a mother be so hard hearted as not to caution one she loves in tender years against wrong; but it is after this has ceased, after the home is superseded by the school, after parents have surrendered such, too much, to teachers, somewhere about the beginning of the teens, that the ruin of character commences. Everybody wonders that the docile child has grown into the reckless lad; but why should he not, if as his need of moral training has increased, both in home and school, his moral training has diminished? This could never be, if such training was understood to be a part of the matter of education which must hold its place when it has reached it. It takes but a few weeks after the college year has opened to judge of freshmen and young ladies of the first year, whether the supreme part of their previous education has been neglected. If it has, it must go hard afterward; hence I give my vote for any and all due increase of ethical instruction, especially at this intermediate and preëminently forming period, which has been pointed out, and for keeping it in its place permanently. To let it go is to let education disintegrate and society slide into moral wreck.

Secondly: Of duty to the government under which our children are born. The more lightly it rests on them the more carefully we should see to it that they do not grow up with the tacit understanding that they are under no government at all. So close is the link between right and rights, that I have always thought that to "the three R's" should be added a fourth, RIGHT; and to the fourth a fifth, RIGHTFUL RULE. Lacordaire said, a generation ago, "Our age is one which does not know how to obey;" "for want of character it is the age of miscarriages." These things are truer now and here than they were then in France; and with a basis laid in general fundamental morals, and continually built upon, in all our schools of every grade,—for it is both absurd and mischievous to postpone it till one studies the philosophy of ethics in college,—the special superstructure we need in American education is the teaching of duty to society and to the various grades of government under which society is organized and made secure. Absurd and mischievous is it to postpone this till one is mature enough to reach the analysis of the Constitution of the United States. What shall the young citizen do and become, meantime? Ignore the State to which he owes allegiance every hour, and is in hourly debt for protection? Imagine that he is under the government of home and school only? Miss the Divine idea of the civil community, only younger than the family and the churches? And what shall the State do meantime and in the future with a mass of youth, all of them unequally lessoned in obligation to law,—for personal government in homes must needs differ, all the way from despotism down to anarchy, and that of churches all the way from hierarchies down to mere religious clubs, while the State in any of its forms must have equal and implicit obedience to the law from all. What is the State thinking about, if it does not secure this,—so vital to itself,—in its own schools? For a whole generation I have been arguing for this addition to our common-school work, even at the cost of some subtraction from grammar and geography, and if need be some slight infringement upon "the three R's." For nearly as long it has been my judgment that this should begin with the lowest and simplest civil organizations, the school district, the township, the ward, the town, the city, those that are nearest to the pupil and should be most familiar and binding, and work onward and upward through those of the county and State to that of the Nation. To a professor in one of our colleges we are indebted for the carrying-out of this idea shrewdly and usefully, in a way adapted to the common schools of Iowa.

Thirdly: Of the teaching of temperance. The most surprising scientific discoveries are those of mysteries in the mechanism of nature, whose nearness to us has hid them from common eyes. And like this was the discovery that the matter of education legitimately and of course includes temperance in its physiological and mental basis, and its relations to economy in home, business, and the State, and to common morality. Why did it not occur to teachers that it does, long before the question was ever raised among reformers and philanthropists? How absurd to go on forever correcting men's abuse of a delicate and costly engine, after it has come into their ignorant and unskilled hands, and never think of instructing them at the beginning in normal methods of handling it, in the doctrine of use and abuse! How absurd to be forever reforming backward the great vice of our day, from the point in maturer life of outbreak and outrage and ruin of fortune, health, character, household and social order, and never think of informing childhood how to escape it all! How wasteful and blind to bring upon ourselves this vast and exhaustive struggle with the saloon, — almost omnipresent and everywhere complete in its deadly, shameless, and diabolical enginery of corruption,—when so easily we might forestall it all in the schools, make it a part of every lad's education to be temperate, and ensure his standing with his fellows, when he comes to man's estate, Temperance reaches out so broadly that we are teaching a large part of one's duty to oneself, to society, and to the State, in teaching it; so deeply does intemperance strike that an education as to body, mind, and soul is incomplete without teaching children and youth to shun it. We train children for life in other things in the light of the maxim " Forewarned, forearmed," — why not in respect to that which renders all other education vain?

SUBTRACTION OF ANCIENT LANGUAGES.

III. In coming now to the question of subtracting the ancient languages from our American education, I am a trifle perplexed as to the precise state of the question at present. It is the Greek that is specially in issue, and it is hard to tell whether its assailants would banish it entirely from all schools or not. They say not; that scion of the Adams family who has vigorously come to the front in this discussion says not, and admits that the study of it is the foundation of the highest scholarship. Let us narrow the issue, then, by throwing out that point. Every good reason for the study of Greek is as valid and as strong as ever. But respect for logic obliges one to say here that many good reasons have not been of such exclusive force as has been claimed for them. Wise classical teachers will argue now-a-days inclusively for Greek rather than exclusively, as of yore. Let me exemplify my distinction at two points. Some linguists so speak of learning thought by means of language, as if the laws of language were *ipso facto* the laws of thought. The one is a mental process; the other a set of symbols, English or Greek, or what not, by which the processes and products of mind are expressed. The laws of every language, then, should be subordinate and subject to the laws of thought, but cannot be the same. The differences in languages lie here, that some point to more of the laws and distinctions in thought than others; the Greek, I thoroughly believe, more than any other; but all of the languages together are narrower in scope than thought itself, and all fail to express much for which we must look away from human speech to nature and science. No man is a theist who does not feel all through his soul that the universe is builded according to thought, and "he who built all things is God"; and physical and mental science sink their plummets into unsounded depths below language to find His thought. Every word of claim for Greek as training to incisive, penetrating, flexible, legitimate, subtle thought, I accept inclusively, but not exclusively. For this eminent excellence it must hold its place in the highest education forever, but not crowd science out of its place below, as having its own measure of the self-same excellence. The second exemplification, let Matthew Arnold supply. In his late lecture on Literature and Science, he said: "The instinct of beauty is set in human nature as surely as the instinct for knowledge or society. If beauty is found in Greek, we may rely on human nature for making it a part of our education. It will be the more studied as men recognize the beauty of it. Women will again study Greek as Lady Jane Grey did. [If Mr. Arnold had visited colleges beyond the Mississippi, we would have shown him, without boasting, that they do.] Even our primitive ancestor, 'a hairy quadruped, with a tail, pointed ears, and probably arboreal in his habits,' may have carried in his nature a necessity for Greek." Qualifying first that the arboreal habits, pointed ears, tail, and treading-the-campus "quadrupante" in a way to astonish Virgil, must have gone out long before the Greek vocabulary and syntax came in,—this may be accepted inclusively, but not exclusively. Our ancestors must have had a necessity for science also, or evolution could never have given it to us; and science, in every nook and corner which it explores, marvelously discloses beauty. And as it must be beauty invented by and wrought out in all things according to thought, science so teaches beauty to every scholar, including the theologian, and can never be elbowed aside by Greek, its fellow-teacher of thought and beauty.

We admit all the facts of failure in both classical and scientific education. Some men who go through college can learn neither thought nor beauty from either, and some can from the one and not from the other. Marshal all the cases of graduates to whom either line of study was useless, and you have proved nothing more than the respective make of mind on each side. Most of the famous Harvard oration on "A College Fetich" is simply demonstration that our highest college-scholarship is unsuited to,—I will not be so unkind as to say, above and beyond, — some of the Adamses. The best criticism on its argument is that of the head of a Massachusetts technical school: "The only mistake Mr. Adams made was in going to college instead of to a school of technology. The glory of the celestial is one, that of the terrestial another, and no man can stretch himself far enough to embrace both." Let the men, then, who were made for physiological research and the like, and the men who were made for physical research, part amicably and entreat each other with due honor and equity. Who can say that it is not in God's plan that there shall be as many of the one as of the other? Who shall say that it is not alike evidence of capacity and incapacity if an individual student has to join the one fold or the other?

Canon Farrar has said: "It is no epigram, but a simple fact, to say that classical education neglects all the powers of some minds, and some of the powers of all minds. In the case of the few it has a value, which, being partial, is unsatisfactory; in the case of the multitude it ends in utter and irremediable waste."

Why should a judicious advocate of the ancient[1] classics dispute this? It is just as true of other studies, and is sufficient reason for excluding no one from its proper place. Let us teach the multitude what the multitude most needs; let us teach "some minds" what they most need, though "some" other minds do not.

If their substance and herdmen have grown so great that they can no longer dwell together in one curriculum, let the classical Abraham and the scientific Lot come to an understanding about partition, and "let there be no strife." Indeed, the elder patriarch must have already been courteous and fair to the younger, or the Harvard orator could not have said truly that it is long since the ancient languages held the old exclusive place, nor could it be suspected that the sciences are elbowing for the most fruitful place, having chosen all the plain of Jordan and leaving a very hilly country to the ancient classical cultus. The institution which excludes *either* from its equitable share in the land simply votes itself out of the realm of the highest scholarship, and denies to its students the highest and best education.

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[1] Goldwin Smith says: "The results of a training exclusively literary have long been manifest; the results of a training exclusively scientific are already beginning to appear."—*Reorganization of Oxford;* p. 32.

And now for the place of Greek in preparatory education; is it to be conceded it has none, save in schools like the German Gymnasia, introductory to an after-course in which Greek is integral? The famous Berlin experiment of ten years, — 1870 to 1880, — stands in bar of this. Twenty-one professors in the former year, thirty-six in the latter, unanimously testify that students from the Realschulen, who had no Greek, fell behind those from the Gymnasia who had studied all round the circle of the sciences. They were less thorough, less expert, less independent in thought; had less idealistic and scientific impulse, less devotion to science, less appreciation of phenomena, less grasp and capacity to understand and solve problems. In the end, the classical student at a German University outstrips the non-classical. One of these Berlin scholars declares that it is "simply impossible for one who has been prepared in the Realschulen to acquire a satisfactory scientific education," and none of the chemists, physicians, or other great masters of the sciences of matter, dispute him. Dr. Hoffmann, the Berlin rector, himself a chemist of the highest rank, sums up their long and exhaustive investigation thus: "The Realschulen of the first rank, however generous acknowledgment may be due to what it has actually accomplished, is nevertheless incapable of furnishing a preparation equal to that offered by the Gymnasium," — and this, let me say, although it teaches Latin throughout, only less than the Gymnasium (in the proportion of 32 to 58), and must get its teachers from the Greek scholars of the Gymnasia. The greater part of all our scientific terms are Greek in origin, and cannot be used in a scholarly, if, indeed, in an intelligent, manner by a mere Latin or German, or French or English expert.[1] And it will always be so; scientific men will never change this. The legitimate inference is not, however, that every one who studies science must take the Greek, and will. That were not a use, but an abuse, of the Berlin demonstration. The majority want, and will want, science for practical application, not for scholarship; and to require of them to go through a classical academy course were as great folly as to abolish such a course or reduce it to no higher study than that of German, or French, or Latin, for those who seek a really liberal education in science. Addition of Greek for these, subtraction of Greek for those, is both wisdom and necessity.

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[1] "Modern languages, which some are proposing to make almost the staple of education, are indispensable accomplishments, but they do not form a high mental training; they are often possessed in perfection by persons of very low intellectual powers. . . . Nor need men be brought to a University to learn modern languages; on the contrary, they are best learnt abroad."—GOLDWIN SMITH, on the *Reorganization of Oxford;* p. 33.

ADDITION OF ELEMENTS OF INDUSTRY.

IV. Shall we add the elements of industry to our American education in the proper place for them? For one, I answer heartily and at once, Yes. Most of the objections that are made lie against adding more than the elements, or adding them out of place. No one, I hope, would introduce them into professional schools or colleges, or the higher female seminaries, nor anywhere else introduce the trades, save into special trade-schools. As elements they belong with other elements in our elementary schools. If the public should teach any, it should teach those. We concede that the exquisite language which perfected itself at Athens is not wanted or needed by the intelligent masses; but industry is. The question, then, of public industrial education is a question of what is best for the individual, and also of what is best for the majority; perhaps more the latter than the former. For the individual, then, whoever was made for manual skill should be trained for it. As these are those who are made for physical activity, chiefly, without intellectual tasking, so these are some who seem to be made for intellectual activity, chiefly, without physical exertion. But these are extremes. It is a public loss, then, if the round man, who was constructed for a book-scholar or author, gets into the square hole of a technical school as he matures; or the square man, who was made for a machinist, gets into the round hole of a seminary of literature. But each of them has a physique in childhood that can be developed by industry alone, and each may have to get his bread by it, and the State must needs find out who are to be skilled laborers and superintendents of labor by teaching them all at the start in life the use of the essentials tools, the chief productions of nature, the staple materials, the leading processes of the great arts. Not only is the necessity for these never to pass away, but all over this land it is to immensely increase; for even the great agricultural States, with their coal and iron, are under the law affirmed by one of our oldest political economists,—" manufactures always move in every land toward the coal measures and the iron mines." Immensely absurd as a college is with a curriculum borrowed from the middle ages,—I do not know where there is one,—it is vastly less absurd than a common school, which has nothing to do with preparing for the real occupations and life of the people at large. This is doubly so, because the Puritan common school grew out of the immediate present wants of the people. The middle ages did better than the nineteenth century hereabouts, for "from 1725 to 1745 there existed in a village of the Dauphin, France, a school where the pupils were initiated according to their tastes, ages, and dispositions, into different kinds of industrial, as well as agricultural work."—(*Report of Royal Commissioners on Technical Instruction;* Lond., 1882, p. 37.) And as the industrial life of the people cannot everywhere be the same, a cast-iron type of common school in each State and every county, preparing the working masses who depend upon it for their educational all, for just the same style of active life, would be an exquisite absurdity. It was pointed out, in a paper read for me to an Association at Marshalltown in 1878, that our large towns and cities must needs differ in type, and their high schools could not be just alike; a mining or manufacturing State requires, and in due time will compel, secondary instruction of another sort from that demanded by an agricultural commonwealth, and these differences of want and of educational matter and form will reach down into the grammar schools and somewhat below. God has not only made us of one blood, but determined also the bounds of our habitation, and thus the diversities of our mental life and work. It is not merely for the statesman, but also for the professional teacher to see that in a great and diversified land like this we cannot have any one national system were even our State organizations out of the way; our local systems, if wise, will follow the differentiations of Providence. Here and there, in the near future, we shall have a few schools like that of the Rue Tournefort in Paris, where "the children in the lowest classes have three lessons of an hour each per week of instruction in handicrafts."—(*Report of Royal Commissioners;* p. 14.) This is the only school in France in which rudimentary trade-teaching is combined with ordinary elementary instruction. No people will need many such schools; no child should go into one who has not shown already the mechanical and constructive bias of mind. We shall have special schools, like the clock-making schools the French have, — those of porcelain decoration, and of apprenticeship to the manufacture of Gobelin tapestries, but few of them; more we need like their superior elementary schools providing workshop-instruction adapted to the industries of the districts in which they are situated; more still, like more than a hundred of the primary schools of Paris, which have workshops attached and elementary manual training. St. Louis has led us all in the higher technical training. Chicago follows, with an Iowa graduate as principal of her noble special training-school. But these advanced institutions do not meet the common want, save by training a few who will appear sometime as masters in the public schools. New Haven has done better in her Dwight and Skinner schools; but Boston, best, — old, cautious Boston, but wary about being left quite behind,—in her new general plan of workshop-training for the primaries. France still leads all nations west of it in her law of compulsory instruction of July, 1881, providing in primary education, *inter alia,* " the elements of the physical and mathematical sciences, and their application to agriculture, to health, and to the industrial arts; manual work and the use of tools of the principal trades; the elements of drawing and modeling; for girls, needlework."—(*Parl. Com.*) England, equally solicitous for the quality and quantity of her products, amends her Elementary Education Act in the same direction. The great producing nations are coming out of that condition ascribed by Carlyle to Germany in the fourteenth century, in which the culture of the polite arts and that of the useful arts had to proceed with mutual disadvantage, each on its separate footing. Drawing, both free-hand and mechanical, is slowly winning the place it deserves among early studies,—but all its value, I think, is not in its indispensableness to the arts and trades; if taught early enough, it will save penmanship, saving time and awkwardness; it will help history, ancient literature, archæology, and natural science. We must look, of course, to better methods and better personal skill in the elementary teacher; to some curtailment of the loose detail of geography; of the premature philosophizing on grammar; of the excess of shop-examples in arithmetic, constructed on the old theory of educating principally for making money; and, above all, to juster estimates of what is worth most to developing minds, to give space and time for industry-training. All this is made easy by the quickening the school workshop lends to the recitation-room. The college or the school that is swamped by the excess of things, now capable of being taught, betrays lack of judgment and selecting power in its conductors. The necessity of subtraction here in order to addition gives the true teacher his chance.

I restrain myself here from those large and pressing considerations that belong to the statesmanship of education. Yet public men would have ground to complain of schoolmasters if they seemed to be incapable of realizing that every child in the community should be brought up to contribute to the common weal, each in its own way, and that much the larger number must do this, industrially All intelligent men are coming to see, too, that here is our best safeguard, in giving industry its rights at the school treasury, against communism and nihilism, and that we cannot justify the voting of public money to our State professional schools at the upper end of the line on any principle that does not absolutely demand the voting of it in greater sums to the workingman's training school at the lower end. And let what is here said be completed with the recognition of the fact that the higher education, even in the ancient classics, has not the slightest ground for jealousy that it will be pushed from its proper and special place by skilled industry. Look at that model Saxon town, Chemnitz, — 89,000 inhabitants, $750,000 invested in education, with district and higher municipal schools, those alone paying $116,900 in salaries in 1878, — one of them gathering 4,000 pupils; its public mercantile school, agricultural school, schools higher and lower,—for weavers, tailors, hosiers, builders, and other trades; for foremen and technologists, its drawing school, higher technical school, *real-schule*,—not omitting the Royal Classical Gymnasium at the head of all. Chemnitz is the busy center of the great Saxon industries; its famous technical schools draw pupils from all Germany and beyond; yet, while its Realschule has 27 teachers and 437 pupils, the classical gymnasium has 24 teachers and 357 pupils. More than twenty years ago one voice was raised in Iowa for industrial training in the public schools as the great educational reform of the future, — a single voice and heard not widely, or without dissent,—it is pleasant now to hear accordant and strong voices, those of intelligent, public-spirited, and wise advocates, on every side.

SUBTRACTION OF THE BIBLE.

V. Shall we subtract from our education what the Bible teaches? Shall we cast from us the help, in our calling, of the Word of God? For one, unqualifiedly and emphatically I answer, No. And for three reasons, each, to me, all sufficient in itself.

1. The literary or intellectual reason. The English Bible is the foremost book in English literature, both for its matter, intellectually estimated, and for the grace of idiom and peerless choice of words given it by Tyndal, noblest of translators. These gentlemen and ladies who argue for more literature in all our schools are clearly right. Of what use to perfect ourselves in knowledge and neglect its expression? Why perfect ourselves in the mechanism of our language and neglect the treasures of knowledge and thought it conveys? Some good literature every day, expressively, winningly read, — in every school, — say you? Well, the Bible has the best. But we must sometimes give our pupils some of the good, which is not the very best. On intellectual grounds this is to be conceded; and there may be those who fail to see why the Bible should hold its ancient place every day, unless I add,—

2. The moral reason. There is absolutely no prospect that any

book will ever be produced that will better teach man's duty to man. And none, if one were, could have the divine authority, making sacred and doubly obligatory moral duty! Its material must be borrowed from the Bible; and, conceding the advantage in many respects of the addition of scientific and philosophical form, which is all that human genius and study can add, the varied, flexible, impressive, thoroughly humane forms ("popular" does not express my meaning) in which Scriptural ethics are cast, will always have wondrous advantage, — even for individual training or obligation, much more for the simultaneous instruction of numbers of youth. Complete the argument, now, with,—

3. The religious reason. Granted, that it is not the business of schools to make children and youth religious; it is their business to teach what religion is. For this is a leading element of knowledge, science, and culture, and he who ignores it ignores the highest and best of what is to be taught. Nor can morality be thoroughly or successfully taught, minus religion. When the late Judge Black was told that the old truths of religion are passing out of date, "Yes," replied the keen and sturdy old jurist, "and I observe that the old distinctions between right and wrong are going out of date with them." Washington said, in his Farewell Address, "For three-quarters of men there is no morality without religion." Let no one object that to read the Bible once a day is to teach sectarian views of religion. For the Catholic to say, "This is to teach Protestantism," is to say that the Bible is a Protestant book; or, if the question is between versions, my Protestant judgment is that in a school district where the majority are Catholics the reading of the Douay version is infinitely better than none. Or, is the question as to books and chapters held to favor certain views? Till the tornado carried away much in my office at the college that was prized, I had there three books of school selections from the Bible for daily reading, brought me from Dublin by an Irish pastor,—selections agreed upon by all the clergy of the chief Irish cities, including the Roman Catholic and Episcopal bishops and the Unitarian ministers, to the great honor of them all. This liberal and harmonious school commission which made the selections had no difficulty in finding far more than was needed for a year's reading in three sorts of schools, of better literature, morals, and religion than any other book or books could supply, to which no sectarian who really believes the Bible could object. The man who objects to any and all Bible reading makes it manifest that the sectarianism is not in the selections, but in himself.

WAGES OF SCHOOLMASTERS IN ANCIENT ROME.

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In these days of educational theories, whatever pertains to education among the Greeks and Romans is worthy of our serious attention. The Greeks were the first of all nations in antiquity to teach education as a science; and the results which they produced were so admirable, and have so profoundly influenced all subsequent systems for training and instructing the mind, that Hellenism has become, not only the most important factor in modern civilization, but is still, notwithstanding the encroachments of the scientists, almost synonymous with our modern conception of culture. The object of Greek education was to foster the inner life of man; to develop, as Matthew Arnold says, the instinct of beauty. The Romans, on the contrary, were an intensely practical people, and Roman education aimed for centuries at nothing higher than to equip the man fitly for the activities of life; to mould the citizen to "perform," in the language of Milton, "justly, skillfully, and magnanimously, all the offices, both public and private, of peace and war." It is true that, at a later time, Greek culture pervaded every department of Roman life, and in the end education lost, in a measure, its intensely practical character, and assumed, in the time of the later republic and early empire, a more intellectual cast. Still these two ideals of education, the Greek and the Roman,—the one the complement of the other,—have remained in a great measure distinct and separate, and as such have influenced modern nations. The Roman system, the aim of which was to form the practical man, the man of affairs, corresponds more nearly with our own ideas of what training best equips a man for the duties of life. And yet may we not find in the subtle sense of beauty that characterized Hellenic life a panacea for many of the defects of modern civilization? Can we not in modern times produce the highest type of manhood by "combining, blending, and modifying the self-culture of the Greek and the self-sacrifice of the Roman?"

Imbued as the Romans were with these practical ideas of life, was it not natural that the training of the youth should be such as would fit him to serve the State in peace and in war? Every citizen was an arm for the State, and it was best that this arm should be as strong and powerful as possible. The practical training, however, that the Roman youth needed to enable him to act his part as a worthy citizen was to be obtained in no school; the self-sacrifice which the State demanded of him was to be learned of no master; it could be acquired, according to the ideas of the Romans, only by engaging in the affairs of State, when the proper age arrived, and by following at the side of the father in the daily walks of life. Plutarch regarded it as a deficiency of the Roman laws that they did not, like those of the Spartans, prescribe a certain system of education, and fix definite regulations for the training of the young. Plutarch naturally had the Hellenic character in view, and did not consider the inherent, deep-seated diversity of mental and moral character between the two nations, — a diversity that has continued to the present day. The absence of such regulations for education on the part of the Roman State must not, however, be regarded as evidence that no provisions were made for training the young. The very plan on which the Roman Government was formed prevented, in early time at least, such regulations from being prescribed by the State. The basis, the starting-point of the government, as indeed it was among the other Aryan nations, was the family with its independent organization,— its chief, its worship, its laws, its council. The power of the father was, within the household, practically unrestricted, and for many centuries,—until success in war and intercourse with foreign nations loosened the ties of family exclusiveness,—the father's authority, the *patria potestas*, remained supreme over every member of the family. The Roman State, then, consisted of many little communities, each managing its internal affairs with absolute independence, except that certain rights and privileges were surrendered in obedience to a principle of political association, to which religion as well as calculation of interest, and a sense of right, contributed.

While the Greeks laid great stress upon individual development, independent of man's relations to the State, the ideal of the Roman centered in the State, and his most praiseworthy ambition was to be useful in some way in increasing its extent. The Roman willingly sacrificed his own individuality, and subjected his own desires to the interests of the whole, and, hence, it was given to him of all nations of antiquity to work out national unity in connection with and based on self-government. At Rome, too, in early times, war was the natural condition of the State, and every citizen must, above all, be a good soldier. Hence, in these directions,—to war and government,— all the energies of the Roman people flowed, leaving every other channel barren of fertilizing power. Little stress being laid on artistic development or on the enjoyment of the refinements of life, it was no wonder that education was valued only as it contributed to the practical and useful sides of life; and such a training one could best acquire by actual contact with the practical affairs of life; hence a Roman boy learned the art of war by actual experience in the field. His knowledge of the laws and history of his country he acquired at home from his father, or attached himself to some celebrated advocate, whom he followed to the courts of law, to the rostra, in his saunterings through the forum, taking notes of his conversation and lectures, and committing his sayings and maxims to memory. It was the actual contact with the business of daily life, the lively interest in political affairs, that gave the Roman boy an insight into public business, a patient aptitude for work, and a readiness of speech, which nothing but such daily familiarity with the arts of war and peace could have bestowed. No credit is to be given to the silly stories of the Roman annalists, reported by Plutarch, to the effect that boys in early times were permitted to go with their fathers or patrons into the senate-house, and listen to the debates and routine of business in that grandest assembly of the ancient world, and that this practice had to be stopped because the mothers teased the boys so much to tell them what was going on there.

Then, again, it was but a small proportion of the inhabitants,—the patrician class,—who could take any share in administering the government. All others were in early times legally, and in later times practically, beyond the pale of such political and civil privileges. In early times the government could prescribe no system of education for the children of noble families, because any interference here on the part of the State would have come into conflict with the paternal authority, which, in all matters pertaining to the internal arrangements of the family, was considered supreme. Hence the Romans, as Cicero[1] says, thought "that education ought not to be fixed, nor regulated by laws, nor given publicly nor uniformly to all classes of society." The training of the children was left to the care of the family, to the judgment of the father, and particularly to the management of the mother, — so that *in gremio matris educari* long remained a maxim with the Roman people. The father taught his sons, when old enough, as Cato did, from the well-stored treasures of his own experience, or trained them to an insight into public affairs by actual contact with the business of the State. The wealthy who could not themselves instruct their children might place them in one of the private schools, or at a later time give them over to the care of a Greek literary slave or freedman, to be instructed in Greek and Latin learning. So valuable were the services of a Greek literary slave,[2] — like Andronicus, Silinator, or Chilo, — whom their masters could let out to give instruction, that ten thousand, even thirty thousand, dollars were paid for one of the first class at a time when an ordinary slave was worth not more than five dollars. When Greek learning became thoroughly domesticated at Rome, Greek schoolmasters came in crowds, offering their wisdom for sale. During all this time, during the whole period of Roman history, no free public schools were ever established for the people. Nearly all the work of instruction was in the hands of slaves or freedmen, or irresponsible persons who flocked to Rome from all parts of Greece, and, like every other work at Rome performed for hire, was held in little esteem. The philosophers, the rhetoricians, the grammarians of note, found ready admittance into the noble families as private teachers; but the large mass of Greek schoolmasters were held in little esteem, and were compelled to eke out a scanty subsistence from such work as they could get. Under such circumstances it is not strange that the work of educating the young was held in little esteem, and that the services of the schoolmasters were very poorly remunerated. The purpose of this paper, however, is not to trace the history of Roman education in detail, but rather to study certain features of it, — the social standing of the teacher, and the remuneration he received for his services.

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[1] *De Rep.* iv. 3, 3.

How early private elementary schools were established at Rome, we have no means of knowing. The first notice of such a school is from Livy, in relating the story of Virginia, who, in the year B. C. 449, was on her way to one of these schools in the forum, when seized by the client of Appius Claudius. In the time of Camillus we know that there were elementary schools at Falerii and at Tusculum.[3] The number of such schools at Rome increased during the time of the republic, particularly after Greek learning become domesticated at Rome, and Greek schoolmasters crowded in swarms to the capital. Such schools were also to be found in the various parts of Italy[4] and in the provinces in the time of the empire.[5] We are utterly ignorant of the character of these schools, further than that the course of instruction could not have advanced beyond the ele-

[2] *Servi literati*: an exquisite cook, cost $5,000; Horace's slave, Davus, cost about $85; Juvenal tells us that Crispinus paid about $240 for a fish, — more than the fisher himself would have brought.

[3] *Livy*, iii. 44. *Livy*, v. 27. *Livy*, vi. 25.

[4] *Plin. N H.* ix. 8, 25. [5] *Suet. Calig. c.* 45.

mentary stage[6], as well as of the subjects taught and the amount of fees received for tuition. Plutarch[7] informs us that Spurius Carvilius was the first to open a private school at Rome, and to charge tuition-fees. If Plutarch is not altogether mistaken, we must understand that Carvilius was the first to charge fixed rates of tuition, or that this was the case in the higher schools,[8] which were introduced into Rome about this time. We cannot believe that teachers had hitherto taught gratuitously. In early times it seems to have been the custom for the teacher to demand no regular sum for tuition, but to depend for his remuneration on such presents as the pupils saw fit to bring him. We know that it was customary for boys on entering school,[9] and the practice continued in the time of the empire, to bring the teacher a present as an entrance-fee, the value of which depended, of course, upon the wealth and liberality of the family from which he came. No writer during the republican period mentions the amount of these fees. Later writers, although it is not until the time of Hieronymus[10] that we have definite information in regard to these presents, give us some information, particularly Varro,[11] who tells us that pupils at the *Quinquatria*, the festival of Minerva, the time when the school-year began, promised the teacher a present,—the *minerval*, or *minervale munus*,—which was regarded as a reward for instruction. Suetonius[12] mentions the fact of "Laberius Hiera, a freedman, giving gratuitous instruction to the children of those who had been prescribed in the time of Sulla," as an act of great generosity and disinterestedness. There must, then, have been regular fees of some amount paid by the pupil to the teacher for instruction, and these fees, as we learn from Horace,[13] Juvenal,[14] and others, were paid either at the beginning of the school-year in March at the *Quinquatria*, or at the Ides of each month. How much these fees were we have no means of knowing until the time of Horace,[15] who informs us in one of his Satires that each pupil paid for tuition on the Ides of each month[16] eight *asses*, which equals in our money very nearly eight cents. This sum was paid for the eight months that the schools were actually in session, and did not include the long vacation,[17] which extended from June 24 to October 15. The schoolmaster's income then must have been extremely small. If we reckon fifty pupils, and we know of many a poor schoolmaster who had less than that number, — and Martial[18] mentions one who had only two pupils, — the yearly income of the teacher would be but little over thirty dollars. No wonder that the schoolmaster, as Lucian[19] tells us, was not always able to pay the tailor, the physician, or the shoemaker. A few facts will enable us to estimate the value of this sum more accurately. According to Polybius, food and lodging cost, in his time, at an inn in Northern Italy, not more than one-half an *as*, or about one-half a cent, per day. A bushel of wheat at this time cost in the same locality, which was the great corn-producing district in Italy, about six *asses*; the price at Rome was much higher, averaging thirty or forty *asses*, although wheat was distributed in the time of the Gracchi to the people at Rome at six and one-half *asses* per bushel,[20] and by later demagogues the price was reduced to about three *asses*. In the time of Cæsar a laborer earned about three-fourths of a *denarius* per day, which equals twelve uncial *asses*, or nearly twelve cents. If we reckon three hundred working-days, he earned about thirty-six dollars per year. Cæsar fixed the annual pay of a soldier at 225 *denarii*, or very nearly forty dollars. In view of these facts, the schoolmaster's salary is not so insignificant as it at first appears. The schoolmaster had also an opportunity of eking out his small income by making out deeds, wills,[21] mortgages, and other papers for his neighbors.

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[6] When Livy (viii. 36) states that boys were instructed in Etruscan learning, as they afterwards were in Grecian literature, he evidently means Etruscan sacred ceremonials.

[7] *Quaest. Rom. c.* 59.

[8] *Hulsebos, De Educ. et Inst. apud Rom.*, thinks that γραμματοδιδασκαλεῖον (see *Plut. l. c.*), may mean *schola quaedam superior;* but the expression will hardly bear this interpretation. Neither the Greeks nor the Romans used σχολή for school. It was not until late in the time of the Emperor that the word obtained this signification.

[9] *Suet. Ill. Gr. c.* 7. The passage refers particularly to the grammarians, but it is also true of the elementary teacher.

[10] *Hier. Comm. in Ep. and Ephes. c.* 6. He lived from A.D. 340 to 420.

[11] *Varro, R.R. iii.* 2, 18; *Juv. x.* 131: *Quisquis adhuc uno parcam colit asse Minervam;* the expression *uno asse* refers to the *minervale munus.*

[12] *Ill. Gr. c.* 13. [13] *Ep. ii.* 1, 197. [14] *Sat. x.* 161 *f.* [15] *Sat. i.* 6, 75.

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[16] The statement of Macrobius (I. 12, 7), *hoc mense* (Martio) *mercedes exsolvebant magistris quas completus annus deberi fecit*, does not conflict with the statement in the text, because Macrobius must have had the *minerval* in mind. Then again, *magister* was a teacher of literature, and not an elementary teacher.

[17] According to the *Cod. Just. iii.* 12, 2, the legal holidays of the courts of justice extended from June 24 to Aug. 1, and then again from Aug. 23 to Oct. 15. *Martial, Epigr. x.* 62:

Ludimagister parce simplici turbae,
Albae leone flammeo calent luces,
Tostamque fervens Julius coquit messem,
Fernlaeque tristes sceptra paedagogorum,
Cessent et Idus dormiant in Octobres.
Aestate pueri si valent, satis discunt.

It appears from this epigram that in July the school holidays must have already commenced, for the constellation of the Lion was visible in July (*v. Nauck's note on Hor. Carm., iii.* 29, 19, and *Krüger's note on Hor. Ep. i.* 10, 16), and that they continued to Oct. 15. Now the term of the courts of justice ended June 24, and it is fair to suppose that the school vacation also began then, and continued, as Martial says, to Oct. 15. There were also many holidays during the year, at the Saturnalia, the Quinquatria, Caristia, Septimontium, and the Calendae Januariae (*v. Plin. Ep. viii.* 7, 1; *Hor. Ep. ii.* 197; *Tertull. de Idol.* 10). Every eighth day was a holiday (*Varro in Nonius v. lusus*).

[18] *X.* 60. [19] *De Merc. Cond. c.* 58.

[20] This is Mommsen's estimate based on a conjectural emendation of Livy (*Ep.*, 60). *Peter: Gesch. Roms. vol. ii. p.* 32, *note*, shows that the price cannot be fixed with any certainty.

These facts show how little the Romans valued the work of the teacher; and it is not surprising, under the circumstances, that we hear of Orbilius, Horace's master, writing, under the title of "The Man Acquainted with Grief," a doleful autobiography on account of the miseries and degrading poverty to which he was doomed. Still, we must not accept too doleful a view of the condition and poverty of the Roman schoolmaster; our information concerning him comes chiefly from the Roman satirists, who were inclined to exaggerate his miseries to give point to their satire. It does not seem probable that the Roman schoolmaster was harsher, or his social standing lower, than were the schoolmasters described by Carleton, Goldsmith, Cowper, Scott, and others, who picture him as arbitrary, tyrannical, and cruel. Scott's Dominie Sampson has passed into history as one ungainly in person and slovenly in dress. Even Shakespeare gives us a glimpse of the repulsive aspect of educational means, in his time, when he speaks of the child as "creeping like a snail, unwillingly to school." The fact is, that not only among the Romans, but even in modern times, the main current of social desires and energies, — the laws, the literature, the wealth, the talent, and the character-forming influences of the world, — have flowed in other channels, and left this one void of fertilizing power. While education has done much toward enlightening the individual and improving the social well-being of communities, it has never reached its high ideal, for the simple reason that it has never been cherished as other causes have been, and hence has never had, until recent times, an adequate opportunity to make known its beneficent power in elevating, transforming, and redeeming men. The histories of all other subjects, — art, literature, architecture, music, — have been written; but of all the literature of antiquity only a meager and insignificant part has reference to education. How completely and intensely the Romans were engrossed in other pursuits is shown by the remuneration and honors that were bestowed upon all other classes of professional and political aspirants at Rome. The income of a celebrated actor, for instance, like Aesopus or Roscius, was about $10,000 per year. Physicians[22] were generally well paid. The body-physician

[21] *Nissen: Hermes I. p.* 149: Idemque testamenta scripsit edum fide.

[22] *Plin. N.H. xxix.* 7.

of the early emperors received a fixed salary of 250,000 *sesterces*, or about $10,500 per year, besides the income from their private practice, which was often very considerable. Q. Stertinius, the body-physician of the Emperor Claudius, reseived a salary of 500,000 *sesterces*, and then considered that he had made a great sacrifice in accepting the position, because he gave up a private practice that yielded him an annual income of 600,000 *sesterces*. These sums are large, and no doubt exceptional, and are so considered by Pliny,[23] but they serve to give us an idea of the income of the chief physicians at Rome during the time of the early empire. The income of a leading advocate like Crassus, Hortensius, or Cicero, must have been vastly more than the salaries mentioned above, although Cicero boasted that he took nothing for his services as an advocate, and he did not assume a pro-consular government, — the most certain mode of acquiring wealth at Rome,—until his return from exile. Still, we know that he invested vast sums in his numerous villas, in his magnificent library, consisting of rare and costly manuscripts purchased for him by his friend Atticus, regardless of expense, — to say nothing of the sums that he loaned to friends and expended in luxury. Presents of enormous value must have been transmitted to him from distant kings and communities, who were desirous of securing the services of the foremost advocate of the times. To the rising politician the income of a pro-prætorean or pro-consular government was boundless wealth.

The competition among the crowd of Greek schoolmasters who flocked to Rome, and into whose hands the work of instruction was chiefly given over, was too great to prevent a high standard of fees being maintained. It is no wonder that, under the circumstances, the master's temper often got the better of his discretion, and that he enforced his stern discipline with the rod. The severity of Orbilius and other schoolmasters was proverbial. It seems to have been the general practice to have acted on the precept of Plato, that "a boy is a ferocious animal." The rod was not spared for slight offences, for Plautus[24] tells us that if a boy missed a single letter in reading, he was soon black and blue all over,—"striped just like his nurse's cloak." Horace[25] recounts in his second epistle, in a most amusing manner, the severity of his old schoolmaster, and the floggings that the boys received while they were pouring over the verses of Livy Andronicus. Suetonius[26] informs us that Orbilius did not, like some schoolmasters, vent all his wrath on his pupils and exhibit a bland deportment to the rest of the world, but he attacked his rival teachers in the most bitter terms. Quintilian,[27] the most famous

[23] *N. H. xxix.* 5. [24] *Bacchid iii.* 3, 31. [25] *ii.* 1, 70. [26] *Ill. Gram. c.* 9. [27] *Inst. Orat. i.* 3, 14.

teacher of his time, made an earnest protest against the custom of flogging. A Pompeian picture represents a master flogging a boy who is hoisted on the shoulders of another, with a third holding him by the heels. Martial[28] mentions the railings of the master and the howlings of the pupils as one of the nuisances of city life. "Even before the crested cock had broken silence," says he, "the air resounds with the savage scoldings of the masters, the noise of floggings, and the cries of the children." "Not with louder noise," continues he, "does the metal resound on the struck anvil, nor is the noise greater in the large amphitheatre when the conquering gladiator is applauded by his partisans." These statements of Martial, of Juvenal, and of others, in regard to the severity of the master must not be overestimated. The cases mentioned by them were probably exceptional, and made prominent for satirical purposes, and do not probably imply any savage cruelty in the Roman schoolmaster above his modern prototype. Cicero,[29] with rare exceptions, speaks kindly of the Roman schoolmaster as being learned, conscientious, and devoted to his work.

In the time of the empire the number of schools[30] was multiplied, the work of instruction under such eminent teachers as Palæmon, Quintilian, Seneca, and Fronto was more thorough and systematic, and teaching became a regular profession, recognized as such by the State, and paid for out of the public treasury. The Romans, too, had learned to set a higher value on intellectual training. Even in the time of the Republic arms were no longer the only avenue to honor and glory; every noble Roman sought to win the favor of the people by figuring in some one of the great political trials that had become so common in consequence of the extortions of the provincial governors. During the later republic, then, every Roman who sought political preferment must, above all, be trained to be a public speaker. The home and foreign policy of the government demanded statesmen of enlightened views, and the day had long passed when a farmer could be taken from the plow and placed at the head of the State. No Roman could hope to arrive at political distinction without a thorough acquaintance with the Greek language and literature; even Cato himself, in his old age, had to succumb to the spirit of the times and learn Greek. The Romans themselves, when they became acquainted with the Greek language and literature, fully realized their own want of intellectual life and their own need of mental culture, and to meet this want Greek learning in all its forms was imported to Rome. With such eager zeal did the

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[28] *xi.* 68. [29] *Ad. Att. vi.* 1. 9; *viii.* 4. [30] *Suet. Ill. Gr. c.* 3; *cf. Plut. Cicero. c.* 2.

Romans fling themselves on these newly-discovered treasures that Hellenic culture became no longer a mere stimulus, an accessory impulse as in former times, but it penetrated to the very heart of Roman life, and met spontaneously the craving there for a more advanced civilization. During the long period of good government that followed the accession of Augustus to power, the two literatures became amalgamated, and the two types of education,—the Greek and the Roman,—became thoroughly fused, and the ideal of the two systems was reached in the teachings of such men as Quintilian and Seneca. The three grades[31] already established in the time of the republic, embracing the elementary,[32] the grammatical,[33] and the rhetorical courses still continued. The methods of instruction had so improved that it was now possible for the pupil to hurry through the elementary course, and to enter at a much earlier age than formerly upon his grammatical and rhetorical studies. The education of young Romans of wealth and position was completed by a course in philosophy at Rome, or at Athens which was then the great university of the empire, or in some of the Greek cities of the East. Through a variety of influences Greek learning was no longer a mere stimulus, as in the days of the republic, but it had now penetrated to the very heart of Roman life, and created a lively,—in fact, an irresistible,—impulse to literary activity. The leading statesmen, even in the time of the republic, favored learned men. Fulvius Nobilior employed the poet Eunius to celebrate his achievements at Ambracia; Scipio Æmilianus, Loelius, and other members of "The Scipionic Circle," lived on intimate terms with Polybius and Panætius. Still, learned Romans and the "incorrigibly wretched pack" of Greeks were not held in high esteem solely on account of their literary ability. Cicero tells us that he treated his learned slave, Donysius, with more respect than Scipio treated Panætius; Ennius and Plautus were ranked by the Roman aristocracy among the rabble. Julius Cæsar was the first who really patronized learned men at Rome; others, however, were not slow in following his example,—most of the emperors favored teachers, encouraging them by honorable distinctions and rewards, and often exempting them from public duties.[34] Gellius[35] mentions a large number of grammarians who were raised to the senatorial rank. Quintilian, Seneca, Fronto, and Herodes Atticus were invested with the consular dignity and title. Pertinax, a schoolmaster, rose gradually to the highest offices of the State, until at last he mounted the throne.[36] Nerva,[37] Trajan,[38] and Hadrian[39] established charity schools, which were cared for and extended by Antoninus Pius[40] (who founded a school for girls in honor of his wife, Faustina), and also by Marcus Aurelius[41] and Alexander Severus.[42]

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[31] *Flor.* 20: Prima cratera literatoris ruditatem eximit, secunda grammatici doctrina instruit, tertia rhetoris eloquentia armat.

[32] Boys entered the elementary schools in the seventh year of their age.—*Quintil. i.* 1, 18.

[33] Boys attended the schools of the grammarian and rhetoritician before assuming the *toga virilis*, or before the beginning of the seventeenth year, in early times (*Liv. xxii.* 57), and before the sixteenth in the time of the empire. There was no fixed age for assuming the *toga virilis*, but it depended upon the *judicium patris*. Cicero, Vergil, Persius, Augustus, and Marcus Aurelius assumed it at the end of the fifteenth year. Their education, however, was not completed; instruction continued as before. *Cic. Brut.* 89; *cf. Ovid. Tr. iv.* 29; *et studium nobis, quod fuit ante, manet.*

The work of instruction was still left, for the most part, to private enterprise. It is true that Antoninus Pius[43] bestowed a fixed salary upon teachers of rhetoric and philosophy in the provinces, to be paid from the treasury of the town where the instruction was given. According to this emperor's arrangement[44] five teachers of rhetoric and five of philosophy were assigned to the larger cities, — four of each to the middle-sized, and three of each to the smaller towns. This number must have been far from adequate to meet the educational needs of cities like Ephesus and Smyrna, which were the largest and most populous in the empire, and hence the chief work of instruction there must still have been done by private schools. An inscription[45] found at Tritium Magellum, in Spain, mentions a grammarian who had been paid a salary from the city treasury as an unusual occurrence. There is no evidence that any schoolmaster at Rome (and Gellus mentions many grammarians[46] who attained a good deal of distinction and esteem, and enjoyed the patronage and favor of the great) drew a salary for instruction from the imperial treasury until Hadrian[47] founded his Athenæum,[48] and appointed a number of grammarians as professors, with a fixed salary. We have no means of knowing how much this salary was. We know that the grammarian was, in general, better paid than the elementary teacher had been;

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[34] Munera civilia seu publica: *cf. Cic. ad Fam. ix.* 6, 5.

[35] *iv.* 1; *x.* 17; *xiv.* 5 and 10.

[36] *Jul. Copit. Pertin c.* 1. [37] *Aurel. Vict. Ner. c.* 12, § 4. [38] *Plin. Panegyr. c.* 28.

[39] *Ael. Spart. Hadr. c.* 7. [40] *Jul. Capit. Aut. P. ii. c.* 8. [41] *Jul. Capit. M. Ant. c.* 7.

[42] *Ael. Lamprid c* 57. [43] *Jul. Capit. Ant. P. c.* 11. [44] *Digg. xxviii.* 6, § 2.

[45] *C. I. L. ii.* 2892: L · MELMIC · PRoP · CLVNENSI · GRAMMALICo · LATINo · CVI · RES · TRTENSIVM · AN · HABEN · XXV · RAIAR · CoNTITVAE · etc.

[46] *Grammatici*, or *literati*, the elementary teacher was called in early times, *ludimagister* at a later time, *literator*, or *grammatista.*

[47] *Aur. Vict. Caes.* 14.

[48] This was by no means a university, according to the modern sense of the word. It was similar to the high schools of Holland. In the time of Theodosius II., there were three orators, ten grammarians, five sophists, one philosopher, two lawyers, or *jurisconsults*, employed as a staff of professors in the Athenaeum.—*Theod.' Cod.* 14, 9, 1.

his fees were paid annually at the end of the school-year[49] in March, and not monthly as was the case with the elementary teacher. Juvenal[50] mentions five gold pieces, or 500 *sestetces*, as the yearly *honorarium* of a grammarian for eight months' tuition. If we reckon thirty pupils, this would give the master an income of 15,000 *sesterces*, or about $800. From this sum the rent of the school-room and other expenses must be deducted. Some grammarians were much better paid. M. Verrius Flaccus,[51] for example, who, at the request of Augustus, removed with his whole school to the Palatine, received a yearly salary of 100,000 *sesterces*[52] for instructing the grandsons of the emperor. Palæmon,[53] who stood high at Rome as a grammarian, derived an income of 40,000 *sesterces* from his school, and as much more from his private[54] fortune. Lucius Apuleius, a grammarian, was paid an annual salary of nearly 400,000 *sesterces* by a wealthy knight, who had taken him into his service[55] and employed him in the same manner as Cato did his servant Chilo, the grammarian.[56] Epaphroditus,[57] a learned grammarian, who lived in Rome from the time of Nero to that of Nerva, and gave instruction there, owned at his death two houses in Rome, and a library of 30,000 volumes of valuable and rare books. Sometimes noted grammarians, like Citarius, obtained great wealth by marriage, or, like Marcellus of Narbo, was honored and acquired great wealth on account of the family connections of his wife.[58] It is related of Antonius Gnipho,[59] a good Greek and Latin scholar, and the teacher of some of the most eminent men at Rome, that he became rich, although he demanded no fixed remuneration for instruction, but left that to the liberality of his pupils. These, however, are exceptions; the large majority of schoolmasters, like Orbilius, Horace's teacher, the poet Valerius Cato,[60] and a host of others, earned more honor than gold. "There is nothing," says Juvenal, "for which the father will not spend more money than for the education of his son."[61]

In the time of the later empire the pay of the elementary teacher must have risen considerably. According to the edict[62] of Diocletian, the price of tuition in reading and writing was fixed at 50 *denarius* per month; in arithmetic at 75; in stenography at 75; in Greek and Latin grammar at 200; in mathematics at 200; in rhetoric at 250. The *denarius*, however, had depreciated so much in value that it is difficult to determine with any certainty precisely what its purchasing power was at that time, especially as the estimates of Mommsen[63] and Hultsch[64] are at such wide variance. Mommsen sets its value at about three cents; Hultsch,[65] on the contrary, thinks it could not have been worth but little more than one-half a cent. According to Hultsch, then, a schoolmaster who had thirty pupils received an income of about $7.50 per month. From the time of Alexander Severus[66] a regular salary, fixed by the government, was paid out of the *fiscus* to grammarians. In the various State papers,[67] issued by the emperors from time to time, we find the salary of grammarians fixed and regulated. According to the directions of Valens, Gratian, and Valentinian, the grammarians who were employed in Gaul, were to receive twelve *annonae*,[68] which equals in our money very nearly $178. There is a rescript of Justinian, of the year 534, to the Prefect of Africa, ordering the payment of seventy *solidi* to each two grammarians as a special privilege.[69]

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[49] *Juv. vii.* 228; *Macr. i.* 12; *Juv. x* 114, refers not to the payment for tuition, but to the entrance fee, the *minerval*, paid by each scholar.

[50] *vii.* 243. [51] *Aug. Conf. viii.* 6, 13.

[52] The *sesterce* of the later republic and of the early empire was one-fourth of a *denarius*, or about four cents.

[53] *Suet. Ill. Gr. c.* 23. [54] *Plin. N. H. xiv.* 48*f.* [55] *Suet. Ill. Gr c.* 3.

[56] *Plut. Cat. Maj. c.* 20. [57] *Suidas v.* 'Επαφρόδιτος.

[58] *Aus. Prof. xiii.* also *xviii.* 5. [59] *Suet. Ill. Gr. c.* 6. [60] *Suet. Ill. Gr. c.* 9 and 11.

[61] *vii.* 187: Res nulla minoris constabit patri quam filius; nosse volunt omnes, merceden solvere nemo.

[62] Mommsen, *Edict Diocl. de pretiis rerum venalium* (*p.* 21). Magistro institutori litterarum in singulis pueris menstruos denarios quinquaginta.

From the preceding sketch we see that the schoolmaster's[70] income varied at different times[71] in different places,[72] depending probably on the demand for such instruction, on the circumstances of the times, and other special causes. But at all times their services were lightly valued, and their social position far from enviable. Then, again, we know that the salary sometimes was not paid promptly,[73] and sometimes the promised *honorarium* was forgotten, or the pupil was transferred to another school[74] just before it became due. Sometimes the grammarian was compelled to discount a considerable per centage from his regular fee in order to get his pay.[75] Even the presents given to the schoolmaster were, in some instances, taken back again,[76] and occasionally he was compelled to enforce payment of the school-fees before the Courts of the Tribunes.[77]

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[63] *Röm. Münzwesens p.* 80, *and Anm.* 23.

[64] *Griech und Röm. Metrologie p.* 252*f*, *and Anm.* 23

[65] Hultsch bases his estimate more on the wages of manual laborers. The maximum wages of agricultural laborers, per day, was twenty-five *denarii*, and board. Most mechanics received fifty; a camel-driver was paid twenty. Mommsen places more weight on the price of food; butcher's meat, for example, which in the second century of the empire cost in Rome about two *denarii* a pound, was now fixed at a maximum of eight *denarii*.

[66] *Ael. Lamprid. Alex. Sev. c.* 44. Grammaticis . . . salaria instituit.

[67] *Cod. Theod. xiii* 3, 11.

[68] An *annonae* equals five *solidi;* the value of a *solidus* was nearly $3.

[69] *Cod. Just. i.* 27. [70] *Suet. Ill. Gr. c.* 3. [71] *Juv. Sat. vii.* 215. [72] *Aug. Conf. v.*22.

[73] *Cod. Theod. xiii.* 3, 1. Mercedes et etiam salaria reddi praecipimus.

[74] *Aug. Conf. v.* 22: Sed subito ne reddant magistro mercedem; transferunt se ad alium.

[75] *Juv. Sat. vii.* 218*f*.

The study of rhetoric,[78] like that of grammar, was not introduced into Rome until comparatively a late period.[79] At first the opposition against the rhetoricians,[80] on the part of the conservative Roman, was stronger even than against the grammarians. . Cato saw a close connection between the study of rhetoric and the trade of the demagogue, and, hence, he poured forth all the vials of his indignant ridicule over the folly of learning orations as Isocrates had taught, and never being able to speak. The Cassandra, however, uttered his warnings in vain. Rhetoric, notwithstanding the decree[81] of the Senate banishing the rhetoricians from Italy, and the edict[82] of the censor prohibiting young men from resorting to their schools, was soon considered by the educated class a useful and honorable study. Oratory was now indispensable to every citizen who aspired to the honors of public life,[83] and hence it was not long before rhetoric became a regular part of the education of the Romans.

In regard to salary, the instructors of rhetoric were much more favored than the grammarians. Juvenal[84] mentions 2,000 *sesterces* as a very great *honorarium* for a teacher of rhetoric. In the time of the republic we have no definite information concerning their pay; but we know that the schools of Greek and Latin rhetoricians[85] were very popular, and largely attended by the youth and even by those of maturer age,[86] who devoted themselves to Greek and Latin declamation with great enthusiasm. Public favor was soon so attracted to this study that in Rome a very large number of professors and learned men, who were held in high esteem, — some of them being raised to the rank of senator and the highest offices of the State, — were employed in giving instruction.[87] The rhetoricians were the first, and for a long time the only teachers at Rome, who received a fixed salary[88] from the imperial treasury.[89] This seems to have been the case also in other parts of the empire; at least we know that

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[76] *Cod. Just. xi.* 19, 15. [77] Tribuni Aerarii; *Juv. vii.* 217, 228.

[78] *Suet. de Clar. Orat. c.* 1. [79] *In B.C.* 159.

[80] *Cic. De Clar. Orat. ii. c.* 3; *rhetores;* Seneca (ep 89) calls them *professores eloquentiæ.*

[81] *B.C.* 162. [82] *B.C.* 92. [83] *Suet. l. c.* [84] *Juv. vii.* 217.

[85] After rhetoric became popular at Rome, it was customary for the student to practice first in Greek, and then in Latin declamation. *Suet. De Clar. Rhet. c.* 1; *Ael. Lamp. vita Alex. Sev. c.* 3; *Script. Hist. Aug. vol.* 1

[86] *Cic. De Orat. i.* 31 *f.* [87] *Suet. De Clar. Rhet. c.* 1. [88] *Salarium.*

[89] *Suet. Vespas.* : primus e fisco Latinis Graecisque rhetoribus annua centena constituit; *cf. Tact. Dial. c.* 9.

Antoninus Pius[90] bestowed a regular salary upon rhetoricians throughout all the provinces.

The first to obtain such a position at Rome was Quintilian, who received from the imperial exchequer an annual salary of 100,000 *sesterces*,[91] or, in our money, $5,439, paid in quarterly instalments. He became rich, and, as we have already stated, was invested by Domitian with the consulship. Quintilian was the great schoolmaster, the wise educator, the systematic and careful instructor; how thoroughly he understood his task is abundantly shown by his great work on education. This treatise was written after his retirement from the active duties of his profession, and contains, therefore, his best thoughts on most of the questions which refer to the education of the perfect man. His attitude toward his pupils is shown in these words: "Let him, therefore, before everything else, adopt the parent's mind toward his pupils." The good fortune of Quintilian awakened the envy of his less favored associates, for his income,—although small when we consider the unsparing profusion and boundless extravagance of the rich in all luxuries pertaining to the table, the pleasures of the race-course, and the amphitheatre,—was boundless wealth in comparison with the poverty of the crowd of half-starved grammarians who thronged the capital, and whose miseries Juvenal so forcibly depicts.[92] Rhetoricians were also appointed to important and lucrative official positions. Pliny[93] asked Tacitus to select young men who had distinguished themselves in rhetorical studies for positions as teachers in Comum. The rhetorician, Antonius Aquila, was recommended by Aufidius Victorius at the solicitation of Fronto[94] for a public position in Gaul. Lucian[95] boasted of being one of those teachers of Greek declamation who held public positions in Gaul with a high salary. In fact, Gaul was at this time one of the most favored seats of learning throughout the empire. There had been for many years excellent schools at Marseilles,[96] Trier, Bordeaux, whose fame Ausonius, a celebrated teacher of rhetoric and grammar, has preserved in a series of epigrams. Autun[97] is mentioned by Tacitus as noted for its famous schools of rhetoric, and we learn from Eumenius (A. D. 297), the royal archivist,[98] that in his time its fame had in no wise diminished. Chlorus, who wished to favor Autun, and preserve the reputation of its celebrated schools, appointed Eumenius teacher of rhetoric, with a salary of 300,000 *sesterces* from the imperial exchequer, and as much more from the city treasury, thinking that many young men would be attracted to the city by the fame of so celebrated a teacher. Eumenius,[99] however, like many a modern prototype, was not avaricious; he begged permission from the emperor to devote half of his salary to restoring the high-school buildings that had been injured and destroyed.[100] Gratian also cared for education in Gaul. He directed that an annual salary of 24 *annonæ* be paid to rhetoricians. In Trier, in order to attract the most famous teachers, he fixed the salary at 30 *annonæ*.[101]

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[90] *Jul. Cap. Anton. Pius. c.* 2: rhetoribus et philosophis per omnes provincias et honores et salaria detulit.

[91] This was four times as much as a military tribune received; the salary of a Roman senator was 500,000 *sesterces.—Suet. vaspas. c.* 17.

[92] *vii.* 186. [93] *Ep. iv.* 13. [94] *Ad. Amicos I.* 11. [95] *Apol xii.* 11, 4.

[96] Noted as a seat of learning in Cicero's time: *pro Flacco c.* 26. [97] *An. iii.* 43.

[98] Sacrae memoriæ magister.

Some teachers of rhetoric, like Quintilian,[102] were also advocates, and in this way very considerably increased their income. Martial[103] mentions 2,000 *sesterces* as an advocate's fee, of which only half was to be paid if the client lost his case. Many, however, received very much more; the celebrated sophist, Polemo, was paid two *talent*[104] for conducting a case in Sardis, which involved the whole property of a rich Lydian. According to the Theodosian code[105] the salary of a rhetorician was fixed at 24 *annonæ*, double that of a grammarian. In Constantinople equally good arrangements were made for higher instruction. Theodosius II. (A. D. 425) appointed rhetoricians, Greek and Latin grammarians, philosophers, and jurists to give instruction in their several departments, and assigned each a salary, and gave up the porticos of the palace to the teachers and pupils.[106] Private instruction was still permitted so long as the teachers kept within the narrow limits prescribed by the government; all who exceeded these limits were banished at once from the city.[107] The oversight of the students on the part of the government was even stricter. An order of Valentinian I.[108] (A. D. 370), in reference to the students at Rome, has been preserved. It directs that all students from the provinces, who come to Rome to study, must bring with them a pass from the highest provincial magistrate, which they must present at once to the *magister census* on their arrival in Rome, and at the same time declare what studies they wish to pursue, and where their residence will be. During their stay in the city the government saw to it that they gave proper attention to their studies, that they avoided the clubs, did not visit the theatre too often, and were not out on sprees late at night. If the student's conduct was satisfactory he could remain until he was twenty years of age; but if he neglected his studies, the city official had authority to whip him publicly, and then send him home.

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[99] *Orat. pro Instaurandis scholis c.* 3 and 20. [100] *Pro Instaur. Schol. c.* 16.
[101] *Theod. Cod. xiii.* 43. [102] *Martial ii.* 64. [103] *viii.* 17. [104] Nearly $2,357.
[105] *Cod. Theod. xiii.* 3. 11: quorum (praeceptorum) oratoribus viginti quattuor annonarum e fisco emolumenta donentur, grammaticis vel Latino vel Graeco xii. annorarum deductior paullo numerus ex more praestetur, ut singulis urbibus, quae metropoles nuncupantur, nobilium professorum electio celebretur, nec vero judicemus, liberum ut sit cuique civitati, suos doctores et magistros placito sibi juvare compendio . . . . *xx.* grammatico Latino. Graeco etiam, si qui dignus reperiri potuerit, duodecim praebeantur annonae.
[106] *Cod. Theod. xv.* 1, 53. [107] *Cod. Theod. xiv* 9, 3. [108] *Cod. Theod. xiv.* 9, 1.

Greek philosophy made its appearance at Rome about the same time with rhetoric. At first it met with a more determined opposition than rhetoric, because it ran counter to the primitive faith and deep-seated convictions of the Roman people. Cato and the conservative party advocated measures of repression. As early as B. C. 162 a decree of the Senate was passed, banishing philosophers from Italy; but the appearance at Rome seven years later of the three leaders of the most celebrated schools of philosophy, rekindled the interest in the study and rendered the action of the Senate of no avail. Every year Greek philosophy, favored by such eminent men as Scipio, Lælius, Stilo, Balbus, Scaevola, and particularly Æmilius Paullus, the conqueror of the Greek nation, who had been the disciple of such men as Polybius, Panætius, Phædrus, Zeno, and Diocles, grew more popular and gained a strong hold on the imagination as well as the intellects of all thinking men.

No sooner had educated Romans become acquainted with the religion and philosophy of Greece than they became painfully aware how insufficient the popular creed and primitive faith were to meet the demands of the age and the cravings of the human soul. Henceforth the ancient ritual lost its hold on the mind, and men turned more and more to philosophy. At last a compromise was effected with the Stoic philosophy, for this seemed most capable of all the systems in vogue of giving expression to the unsympathizing and severe earnestness that so eminently characterized the Roman people. Philosophy gradually penetrated into all the grades of society, and soon gained a place in the regular course of instruction. It became customary for young men of rank, after completing their grammatical and rhetorical studies, to enter the school of the philosopher either at Rome, or, if they wished to obtain a more polished education, to take up their residence at Athens, which was then the great university of the Roman empire. Thither Cicero,[109] Bibulus, Messala,[110] Atticus, Ovid,[111] Horace,[112] and many others went to perfect themselves in rhetoric and philosophy. Vergil tells us with how much joy he turned from the empty disputes of the schools of rhetoric to the serious questions of philosophy. Attempts[113] were made from time to time to banish the philosophers, and to restore the ancient ritual, but these efforts were in vain, and the study spread not only throughout Italy, but the provinces embraced it with enthusiasm.

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[109] *Brut.* 91: *Plut. c.* 4. [110] *Cic. ad. Att. xii.* [111] *Trist. I.* 2, 77. [112] *Ep. ii,* 2, 40.

In regard to the remuneration paid for instruction in philosophy in the time of the republic, we know nothing. Under the early empire our main source of information in regard to the course of study and methods of instruction in philosophy, as well as to other departments of study, come from Seneca,[114] Nero's tutor, and other eminent men like Tacitus and the two Plinies ; but they tell us little or nothing of the salary paid a teacher of philosophy. There were professors of philosophy in Hadrian's Athenæum, but we know nothing of their salary. From the time of Hadrian to that of Antoninus Pius the interest in the study of philosophy increased, and it became more and more a matter of public concern that teachers of ability and reputation should be employed to give instruction. Antoninus Pius[115] established throughout the empire schools of philosophy, and fixed a regular salary for the professors. Marcus Aurelius, when he visited Athens in A.D. 176, founded eight professorships,—two for each of the four schools of philosophy, Platonic, Peripatetic, Stoic, and Epicurean,[116]—with a regular salary of 10,000 *drachmæ* per year.

It is related of Alexander Severus[117] that he formed schools and established a fixed salary for teachers throughout the empire. As education assumed a more public character, it was natural that the government should prescribe some method of testing the ability of the teachers. The professors of philosophy at Athens were sometimes appointed by the emperors, sometimes by the city, and they were required to undergo a preliminary examination as to their moral character and their ability to lecture,—being required at first to lecture on trial.[118] Sometimes the contest among the candidates waxed so hot that the city official was unable to decide, and was compelled to leave, at last, the decision with the emperor.[119] An order of Theodosius II. (A. D. 425) prescribes that, among other professorships established by the government in Constantinople, there should be one of philosophy.[120]

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[113] Augustus restored the ancient ritual; Nero prosecuted philosophers; Vespasian banished them from Rome, and Domitian from Italy. Later emperors, particularly Hadrian and Antoninus, favored them, while Aurelius was himself a philosopher. Tacitus says of Agricola, " He succeeded in the most difficult exercise of self-command, he devoted himself to the study of philosophy, and yet rescued from its influence the qualities of a man of action."

[114] *Epist. xii.* 89: *cf. Quintil. Inst. Orat. x.* 1, 129.

[115] *Jul. Capit. v. Anton. Pii. c.* 11 : rhetoribus et philosophis per omnes provincias et honores et salaria detulit.

[116] *Dion. Cass. lxxi.* 31, 3. [117] *Lamprid. v. Alex. Sev. c.* 44.

[118] Julian prescribed in *Cod. Theod. xiii.* 3, 5: magistros studiorum doctoresque excellere oportet moribus primum, dein facundia ; sed quia singulis civitatibus adesse ipse non possum jubeo, quisque docere vult, non repente, nec temere prosiliat ad hoc munus, sed judicio ordinis probatus decretum curialium mereatur optimorum conspirante consensu.

As the empire declined in material prosperity, interest in learning decreased. The school-attendance fell off so much, even in the time of Alexander Severus,[121] that he adopted various measures to encourage all, but particularly the poor to educate their children. In the general decline of culture the schools of philosophy suffered with the others. The study was still pursued with great zeal and enthusiasm, but its aim was entirely theoretical and visionary. It was evident that the limit of its usefulness had been reached, but none were willing to abandon it as shadowy and worthless. The study in the time of Seneca was precisely where it was in the time of Cicero. The very nature of the old philosophy,—constantly dwelling on what is the greatest good, — whether all things are fated, whether we can be certain that we are certain of anything, — might sharpen the intellect; but it could add little to the stock of human knowledge. In fact, the ancient philosophy was, as Macaulay says, " a treadmill, not a path. It was made up of revolving questions,—of controversies which are always beginning again. The acuteness of intellect was of no avail. A pedestrian may show as much vigor on a treadmill as on a highway. But on the road his vigor will carry him forward, and on the treadmill he will not advance an inch. The minds of the ancient philosophers merely marked time,—they did not advance."

The barrenness of this ancient philosophy is not accounted for by the oft-repeated assertion that the ancient philosophers neglected the natural sciences. Seneca and Pliny wrote largely on natural philosophy. The great mistake was in the aim of the philosophical schools,—the mind was turned entirely from the practical, useful affairs of life to the most theoretical and visionary abstractions. The aim of philosophy was, as Seneca[122] says, " to raise the mind above the sordid cares." " In my time," continues Seneca, " there have been inventions of this sort,— transparent windows, tubes for diffusing warmth equally through all parts of a building, short-hand, which has been carried to such perfection that a writer can keep pace with the most rapid speaker. But the invention of such things is drudgery for the lowest slaves; philosophy lies deeper; it is not her office to teach man how to use his hands. The object of her lessons is to form the

[119] *Lucian, Eunuchos.* [120] *Cod. Theod. xiv.* 9, 3. [121] *Ael. Lamprid. Alex. Sev. c.* 44.
[122] *Epist.* 90.

soul. We shall next be told that the first shoemaker was a philosopher." "For our own part," says Macaulay, "if we are forced to make our choice between the first shoemaker and the author of the three books 'On Anger,' we pronounce for the shoemaker. It may be worse to be angry than to be wet; but shoes have kept millions from being wet, and we doubt whether Seneca ever kept anybody from being angry." This unfruitful study of philosophy was naturally reflected in the schools. As it was not the aim to discover new truths, the habits of observation and investigation could not be cultivated. All effort was expended on the manner of teaching. Crowds were often attracted by the style or gestures of the lecturer. Philosophy became a mere drill in verbalism, while the real essence of things, whose study would have touched new springs of thought and interest, was never thought of. This wrangling, barren philosophy lingered on in many shapes, mingling with many creeds, long after men knew it had outlived its usefulness.

When we consider the low estimation in which the teacher was held, how inadequately his services were rewarded, is it surprising that he, in the general decline of things, fell into routine-work,—the mere conning of facts, maxims, and extracts from the text-books. Then, again, as the whole aim of education under the empire was to make wrangling, noisy speakers,—not workers,—the mind was drawn away from the virtue of things to the mere learning of words. The lack of all suitable provisions for the education of the toiling millions took away the only means of recruiting society. The people in the days of the republic had been honest farmers and tradesmen, struggling for their political rights; under the empire, brutalized by the public games, systematically corrupted by the government, and neglected by the literary world, they were sinking into greater poverty, and falling into miseries from which nothing but a new condition of society could save them.[123] How little education was valued, Ammianus Marcellinus[124] is a constant witness: "Those few houses which were formerly celebrated for the serious cultivation of becoming studies, are now filled with the ridiculous amusements of torpid indolence, re-echoing with the sound of vocal music and the tinkle of flutes and lyres. Lastly, instead of a philosopher, you find a singer; instead of an orator, some teacher of ridiculous arts is summoned, and the libraries closed forever like so many graves; organs to be played by water-power are made, and lyres of so vast a size that they look like wagons, and flutes and ponderous machines suited for exhibitions of actors." It would be impossible to picture

[123] *Am. Marcell. xiv.* 6, 17 (*end*). [124] *xiv.* 6, 18.

the misery, the superstition, the ignorance, and the degrading demoralization which, like a crust of ice gathering imperceptibly over the surface of a stream, were creeping over the Roman world. The people neglected on all sides become a motley multitude, without opinions or purposes, over whom a lethargy, a torpor, had spread that numbed every energy, and withered every noble instinct. It was time for a new order of things to arise that should reveal to education its true aim,—the enlightenment and elevation not of one class, but of all classes, the full fruition of which promises to be realized in our own day in the free public school, made good enough for the best, and free to all.

MODERN LANGUAGES AND THE COLLEGE.

BY C. A. EGGERT, IOWA.

The question of the position of modern languages in our colleges has recently been discussed with a degree of earnestness that seems to indicate a general interest in the subject. Taking our colleges as they are, it is impossible to touch the question without discussing at the same time the merits of the ancient languages that now occupy so large a proportion of time as to make the regular college a very unfavorable place for the acquisition of a good knowledge of a language like the German, or even the French. Our best colleges require at least three years of preparatory study in Latin and Greek, and afford, in their four years' academical course, additional time and means for the study of these languages. Neither French nor German is, as a rule, required at all, and those who would learn something of these languages are limited to a few terms toward the end of their college course, and at a time when the acquisition of a fair pronunciation is exceedingly difficult. It is generally believed that a modern language requires for its acquisition much less time than an ancient; and this error, — for such it is, if we may believe such a competent judge as Professor F. M. Mueller, of Oxford, — is at the bottom of much of the confusion that is apparent in the discussion of the subject, even by many of those who are friendly to the modern languages.

No one has more earnestly and more eloquently argued in favor of the study ot modern languages than Mr. Charles Francis Adams, Jr., in his Harvard address; yet even he wishes to offset a thorough knowledge of *two* modern tongues against so much of Greek as is taught in the prescribed preparatory study of that language. This is preposterous.

If a thorough knowledge of a modern language is not acquired in much less time than it will take to learn an ancient language, it is clear that the college, as it now is, cannot be considered a proper place for studying the modern languages and their literatures. The question, then, is: "Shall these latter be neglected by those who seek the best culture the age can give?"

Among those who have publicly emphasized the importance of Greek studies, no one deserves more attention than Mr. Matthew Arnold. In a recent speech on the subject, Mr. Arnold assigned as one of his reasons why Greek should be generally studied in our colleges the fact that Greek art is distinguished by symmetry. He alluded to the London Strand as a street illustrating the absence of such symmetry, and the sense of his remarks, if not his very words, implied that a more general study of Greek would bring about greater symmetry in buildings.

We would not undervalue the force of the argument, but we must insist that the argument should be used with all the qualifying conditions that Mr. Arnold adds to it. For Mr. Arnold, Greek thought, art, and civilization should be thoroughly understood,—vocabularies and grammars can at best serve only as means, and not the most important ones, to arrive at the substance of Greek culture.

Now, it seems to us an indisputable fact that, while a knowledge of the Greek language does not necessarily disqualify a person for the appreciation of the beauty of Greek art, and Greek architecture in particular, such appreciation must mainly come from a contemplation and the study of the works of art themselves. At least, if the same argument were applied to a modern art, like music, it would not be denied that a very thorough knowledge of German would be, so far as the appreciation of the best German music is concerned, of very little consequence compared with the knowledge and study of the works of the great composers. A student might read Hegel or Kant with ease, and yet be utterly obtuse as regards the beauties of Beethoven and Mozart.

Mr. Arnold also emphasizes the great value of Plato's ideas, but a close inspection of the meaning of Mr. Arnold's words has led us to no other results than these, — that Plato favors the culture of the soul, and of the intellect, in spite of some radical and essential mistakes that make his system, taken as a whole, more objectionable than that of Rousseau. All honor to Plato and his ideas! We have no intention to deprive this eloquent thinker of any of the laurels to which he is entitled; but, really, if we wish to inculcate the love of truth, of high culture, moral and æsthetic, in the hearts and minds of our young, we can use other authors with at least as much success as we can Plato. We have authors who know all that Plato knew, and — a great deal more. We have moralists who favor truth and righteousness, and who make no discriminations as to heroes who shall have as many mistresses as they please; as to imperfect children, who must be put away to perish in decent privacy; as to slaves and common people, who must not be looked on as amounting to much more than the tools they use. We have authors just as eloquent as Plato, who are more catholic than he, who do not exclude poetry from their republic, and who behold beauty and harmony in regions where no Greek ever deigned to look.

It is too little understood that, no matter what the *formal* value of a language may be, its merely intellectual value is really that which gives it a permanent claim on mankind; and this intellectual value is found in a good translation. On this subject the testimony of Goethe, who had all a poet's fondness for the classic tongues, should be decisive. Goethe believed that all that is essential in a foreign author's thought will reappear in a good translation. Even of the *Iliad* he thought that a prose translation in good German would give young students a good idea of the essential in the poet's thought and style.

As simply a matter of fact, translations will always be the principal medium through which one people will learn to know the thought, science, and literature of another. Shakespeare in German is as great a source of enjoyment to the German as he is to us in English. Schiller is perfectly appreciated among us, and Goethe at least in so far as he has been adequately translated. In fact, if the French and German languages were dead languages, like the Latin and Greek, nothing could be said in favor of their study that might not also be urged in favor of the study of the others, except that they represent a later, higher, and richer civilization. If we plead for a proper place for the modern languages in our colleges, it is not because we undervalue good translations, but because we believe that the ability to read these languages is one of the most powerful aids in the work of thought and of culture, for the simple reason that they are the *actual* vehicles of the thought of two important living nations.

The "Strand" in London is certainly a very unsymmetrical street, but Greek is studied in the schools of England with greater zeal than it is anywhere else outside of Germany. France, with her small modicum of Greek, succeeds far better in putting up symmetrical buildings and streets than England. In fact, we have an idea,—Mr. Arnold may call it a superstition,—that a good architect would not for a moment believe that the study of Greek has anything to do with the irregularity of the public streets and buildings of England. The spirit of Greek art is one thing,—the study of Greek in our colleges is another. We cannot place high enough our estimate of the excellence of the former, but we have serious doubts as to the absolute necessity of the latter; and here we wish to be particular in asking not to be misunderstood. We do not mean to say that Greek must give way to German or French, if Greek is the study likely to benefit a given student more than any other study would. We believe that experiments have proven the value of literary and linguistic training, and we make due allowance for the high opinion placed on Greek and Latin studies by men like Gladstone and Mr. M. Arnold. Undoubtedly, if it were possible in our age for a young man to acquire a thorough knowledge of two ancient and at the same time of two modern languages, without neglecting other essential studies, there would be no need for any one to differ with those who now manage our colleges. But it is not possible. Presidents of colleges, like Dr. Barnard of Columbia, confess that our graduates have not mastered even the two ancient languages to which the principal share of their attention was devoted.

A high German authority, the late Mr. Lasker, of the German Reichstag, known in Germany as an enthusiastic and competent student of Latin and Greek, and believed not to be inferior to Mr. Gladstone in scholarship, is of the opinion that the German classical schools, the *Gymnasia*, will be compelled to give up one of the ancient languages in order that at least one may be properly acquired. He advises that Greek be dropped, except where required for a future specialty. This is magnificent, in view of the recent test of the Berlin University as to the relative merits of the training of graduates of the classical and of the so-called "real" schools. For while this test undoubtedly proves the superiority of a training that is principally literary, it also proves that, according to Mr. Lasker and others, the students who proved superior had not obtained a perfect mastery of the languages studied.

It is commonly supposed that the Berlin test affects the modern languages, condemning them as means of preparatory study for the University. A glance at the relative position of the ancient and modern languages will, however, show that the question was not decided against the modern languages, but rather against the *less* amount of language, with a corresponding greater amount of mathematics and science, which distinguishes the "real" school from the Gymnasium. The latter requires, counting the rate per week for six years, a total of 126 hours for languages, mostly Latin and Greek; the former only 84 hours, of which 42 are devoted to Latin. The meager allowance of 42 hours for two modern languages, the French and English, proves both the low estimate even the Realschule places on these languages, and the irrelevancy of the "test" in so far as it is supposed to affect them.

It has nowhere been proven that an *equal* amount of time and attention given to two modern languages would not be as successful as a preparation for University studies in the German sense, as the preparation in Greek and Latin has been found to be.

We would not do anything to banish the spirit of Hellenic art from our higher institutions. Far from it. We would like to see Greek art, as well as Greek language and literature, taught by the most competent teachers, the best approved methods, and with the best apparatus attainable. But we claim that the necessity of the times compel by far the greater portion of those who seek higher culture to forego the pleasure of Greek language studies. Such may still be largely benefited by model translations, of which we have an abundance; but the principal share of their time should not, in reason, be claimed for studies which, no matter how pleasant and important for the specialist in a certain direction, cannot compare in importance with other studies for the specialist in other directions. And let it not be said, in spite of the facts before us, that colleges should not prepare for specialties, for the preparation hitherto given by them has been special, and it is precisely for this reason that, in its best form, it has proved so successful. To be sure, it would be very wrong to use the time of the collegiate student for the acquisition of a special branch of professional or other business. That is not the object of college study. But precisely as it has been claimed that Latin and Greek prove of great benefit to the future lawyer, and hence are preparing for a speciality, so it may be claimed for French and German studies that they prepare for the calling of the future statesman, naturalist, architect, or, — and why not? — the merchant, banker, engineer, and, at any rate, the teacher who may be called on to teach these languages, or branches that, without them, — *e. g.*, modern history,—can never be fully understood and mastered.

Too much importance has been attached to the influence of classical studies on the formation of a good literary style. We grant, of course, that a close study of foreign masterpieces of style, both ancient and modern, cannot but influence the student's standard of taste; but the same results must certainly be obtained by a careful study of the best models in one's own language, and of translations. We grant, also, the exceptional value of Latin as furnishing a valuable help to a more intimate knowledge of many English words and their peculiar force and significance, though we are aware that on its grammatical side the English is essentially a Teutonic language, and that therefore the study of German, as Professor Whitney thinks, is equivalent to a historic and critical study of English itself. On the other hand, we need only remember that poets of the highest rank, prose-writers of the very best literary taste, orators of the greatest excellence, have lived and achieved fame without having been trained in the Greek tongue, or even, in many cases, having received any appreciable benefit from the Latin. What greater names could any one mention than Shakespeare and Dante in the first rank,—of Burns and Schiller in the second? What philosophic writer excels our own Benjamin Franklin in his specialty? What scientific thinker writes more keenly and incisively than Herbert Spencer? The prose of Professor Tyndall is classic in the best sense, and so is the oratory of Bright. The same praise may be given to the writings of Marshall Moltke, who, like the first Napoleon, excelled not only in generalship of the highest order, but in other intellectual gifts. President Eliot believes that graduates of the polytechnic schools compare favorably in the matter of culture with graduates of the universities, and no competent judge, we believe, has ever questioned this jugdment. But Greek and Latin is foreign to the polytechnic schools, which, nevertheless, might furnish the architects that, if given free scope, would soon change the unesthetic "Strand" into a thing of beauty.

The most original architecture of modern times, the Gothic, is as distinguished for symmetry as the Greek. He who doubts this need only look at the cathedral of Cologne and study its details. Yet all this noble architecture arose and grew to its perfection before Greek studies were thought of in the countries where it flourished. It would appear, then, that high excellence can be, and has been, achieved on a different foundation from the time-honored one of Greek and Latin. If so, why not recognize the fact in our college curriculums? Would higher culture suffer if Mr. Adams's suggestions were acted upon? That would depend on the manner the new studies would be taught. So much is certain, that a smattering of German or French cannot be an equivalent of a thorough course in Latin or Greek. Thorough study, or none at all, should be the motto.

French is an easy language to read, but we question whether a person who cannot express his thoughts in French with accuracy, and with some degree of ease, can be said to know French. To know and to know are such different things. That Englishman who was surprised that French children four years old talked French better than he could, might have known infinitely more French than those children, but his appreciation of the children's range of language was certainly inferior to theirs. To learn French so as to appreciate it, is a very much more serious undertaking than to learn enough to get along with an easy novel; and all this is even more true of the German. It is no small accomplishment to appreciate thoroughly a fine period by Goethe, for the German construction of periods is as artistic and flexible as the Latin construction, and it requires a nice ear and an exact knowledge of syntax to construct a really good one. Besides, to be able to read Hegel and Kant, Schiller and Fichte, Schopenhauer, and Humboldt,—not to mention humorists like Richter, critics like Lessing, and word-artists like Rueckert,—is certainly no mean accomplishment, and one not learned in the brief period that even our better class of colleges allow for the study.

In Cornell University at Ithaca, N. Y., as also in the Universities of Michigan, of Iowa, and of some other States, parallel courses with the old classical course have been established, and, as far as we can learn, have given good satisfaction. In these courses the Latin is generally retained, though in part as an elective study, while the place of Greek, and in part of Latin, is occupied by the modern languages. As yet, we believe, no college further West than Cornell has adopted this plan, which can only succeed when the two courses are strictly parallel and no discrimination is made in favor of either. It remains to be seen whether the leading institutions of the East will adopt the same or a similar plan. Such a plan would conciliate those interested in the time-honored course, while doing justice to those who desire for their children a different but not an inferior culture.

THE ORIGIN OF THE FIRST GERMAN UNIVERSITIES.

BY G. G. BUSH, PH.D.

[Continued from March-April No.]

The Position Occupied by the First German Universities. — The origin and establishing of the German Universities permit of a close comparison with the French and English, although all the difference depending upon certain national peculiarities are clearly discernible. Besides this, it is true that the English were always more fortunate than the others in securing exemption from royal authority. In Germany, in educational as in political matters, it was always the business of the first in the State to lay the foundations and watch over the development of its institutions. If we consider that for centuries before the German schools were founded, most of the neighboring States were making encouraging progress in education; that in some branches of science they had made not unimportant beginnings, — namely, in mathematics and physics among the Moors of Spain, in medicine and the law in Italy, in theology in France; that in England men had raised themselves to apostles of their own and other lands, and that the Magna Charta (1215) had become the basis for the national idea and a surety for the unshackled development of scientific institutions, it would seem but a natural consequence that the German Universities of the fourteenth century, building upon these foundations which had been laid by the other universities of Europe, should offer a better solution of the difficult problem of intellectual advancement. That such expectations, if entertained, were not realized is evident not only from the complaints of trustworthy contemporaries, but much more from the traditional scholastic bent in all branches of science.

It is not to be overlooked, however, that in the second half of this century the works of Roman and Grecian writers, as well as teachers and expounders of the same, had greatly increased in Europe. This was especially true of Italy, where a contest had begun which was destined in time to free the mind from the errors of a dark scholastic philosophy, and enable it to perceive a purer idea of art and science in those eternal pictures of the classic world. For Germany this was an important epoch, for in the first universities, in spite of their defects, there lay the greatest surety that the spirit of progress had seized upon the nation and would soon liberate it from an irksome thraldom. Though the value of these schools can hardly be overestimated, still it would not be just to measure them by any standard of to-day. The idea of universal culture did not yet prevail, and could not so long as the schools were to any extent controlled by priestly power. Fortunately the dominion of the monks was near its end, and the cloisters where they had ruled for six hundred years were no longer to be regarded as the chief fosterers of learning.

In these early universities much time was given to disputations and the practice of sophistries, under the belief that in this way the mind could secure that discipline that would enable it to cope successfully with the subtle questions of dialectics, and to this are we indebted for the saying of Leibnitz: *in stercore scholasticæ barbareii delituit aurum.* But they have other and higher claims to consideration than this. At a time when printed books were unknown, and written ones by their rareness and expensiveness could be only the property of a few, the universities became the favored receptacles of all the attainable treasures of knowledge. As the period of study extended through many years, they exerted also a peculiarly salutary influence in bringing together in familiar intercourse all classes of men. From the difficulty of obtaining knowledge, princes and even crowned heads were found in the lecture-halls, and took part in the customary disputations, academical processions, and festivals. Thus was given to the highest and lowest the best that science could then offer. Besides, there was in Germany a purely personal participation of the noble founders in their own creations. To this personal interest was due the improvement in the methods of teaching, increase of teachers and provision for their support, extension of privileges, and assistance in putting an end to prevailing abuses.

During the fourteenth century the Pope began to assume a new and more intimate relation to the universities. Before this time it had not been thought necessary to secure the papal sanction in order to found a university, or even that department of it devoted to theological study, except when this had been established later than the other departments, as happened at Bologna and Padua.[1] But as the number of universities increased a spirit of rivalry was awakened, and the question of rank and of the validity of the academical degrees conferred became of vital interest. Hence the papal confirmation[a] was sought because, when obtained, the rights of the university were acknowledged in all the lands of the Romish church. This custom of seeking papal favor was continued in Germany until about the opening of the Reformation, when in its place royal letters were given which vouchsafed similar advantages.

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[1] In Paris, where the school of theology sprang from the older parish school, the bull of confirmation was neither sought nor obtained.

Through the help of pope and prince, it was further sought to make the universities independent and privileged corporations, so that in case of foreign assaults they might be able to offer successful resistance. Thus at an early period there sprang up between them and the German cities a strong bond of union, rendered the more stable because formed on the sure basis of mutual advantage. The coming together of large bodies of students advanced materially the welfare of the cities where the universities were located, and gave them increased consideration in their far-reaching alliances with other cities. This compact between the city corporations and the Universities was of great importance in so defenceless and quarrelsome an age, especially as their liberties were continually threatened by a powerful union which had been formed by the clergy and the knights. Hence it became possible for the universities to approach more nearly to the original conception of the founders, namely, that they should be not simply State establishments but world-institutes, founded upon the idea of science.

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[a] The papal Bull was always the same. The pope, as head of the faithful, declared himself bound to do all in his power to further the prosperity of the sciences by means of which God's honor is extended, genuine faith increased, the prosperity of the church, and right, justice, and human blessedness promoted. Therefore he was pleased both to grant the request to found a university, and to confer upon it all the rights of other existing universities. Especially did he give to the four faculties the right to teach, and, according to custom, to promote the pupils step by step to the degrees of Bachelor of Arts, Licentiates, and Masters of Arts, and that those so promoted should have everywhere authority to teach. It was at first held that only the pope could give this authority, because he stood at the head of Christendom. It is possible, therefore, that this may explain the name *studium generale*, which was always given to the earlier universities,—not because the institution comprised all four faculties, but because the graduates of a university sanctioned by the pope were recognized as such by all the universities of Europe, and had everywhere authority to teach.

It was customary in the papal Bull to praise the city where the university was to be located,—for example, the purity of the air, the abundance of the necessaries of life, the fruitfulness of the surrounding country, the attractiveness and convenience of the dwellings, and sometimes (as in the case of Leipsic) the morality of the people.*

The question has arisen whether the German universities also needed to be confirmed by the emperor, who was likewise Roman king. It seems that the University of Prague received such confirmation from Charles IV. as Roman king the year after its founding; but from that time until 1456,—that is, for more than a hundred years,—the royal confirmation was not sought.*

* Von Raumer: "Die Deutschen Universitäten."

As, therefore, about the middle of the fourteenth century, on account of the increased interference of the pope with the constitution of the empire, a separation of royal and papal administration took place in Germany; as the rights of the State came in conflict with those claimed for the church; as the appeals for the improvement of the clergy and the introduction of many needed reforms became more and more urgent, the universities, believing it to be in accordance with their prerogatives, took an ever more important political position, opposed the empty pretensions of the nobility, supported the interests of the ruler against pope and clergy, and, in spite of the newness of their influence in Germany, became the strongest bulwarks against ecclesiastical and worldly obscurantism.

Founding of Universities at Prague, Vienna, Heidelberg, Cologne, and Erfurt. — With a single exception the German universities of the fourteenth century were founded in the latter half of this period. As they sprang up in rapid succession, and were all more or less modeled after the University of Paris, it will not be thought strange if we find in their external constitution a remarkable resemblance. From this it is evident that we cannot treat of them in chronological or analytical order, but must choose a synchronistic, and, with reference to characteristic deviations, a synthetical method of treatment.

In time past, on account of the rivalry existing between the university and the desire to claim precedence, the question of their origin has been beset with many difficulties. It has been claimed, for example, that a university existed in Prague even before the introduction of Christianity, and in Vienna as early as 1237, or, at the latest, 1296. Admitting that schools had been established, it is altogether probable that they were not bound together by laws and statutes, had no divisions into faculties, nor power to confer the academical degree, and were in general of too elementary a character to exempt the more assiduous students from the necessity of seeking their culture in other lands. The fact that the papal sanction was often obtained years after the founding of a university has doubtless in some instances given rise to a conflict of authorities. Still there can be little doubt that the original sources of information are sufficient, not only to remove the chronological difficulty, but in most cases preserve the historical and valuable epochs and names which, through their great merit, deserve to enjoy the special regard of future times.

Such a name for the founding of the University of Prague is that of Charles IV., king of Bohemia, who was educated at Paris, and there learned to value the importance of a more thorough education.

Charles IV., in accordance with the unanimous voice of history, was a man of true nobility of character, and one of the most remarkable scholars of his age. He was not only a patron of learning, but himself one of the most versatile dialecticians; was acquainted with several languages, and could use them readily; possessed an extensive knowledge of both modern and ancient history; continued with zeal the study of law, which he began while a young man in Italy; and, somewhat in advance of his age, delighted to bury himself in the study of the Bible.

At the beginning of his reign he put into immediate execution the plans he had formed for the founding of a university. He was present at the battle of Crecy, where his father, King John, fell, and he succeeded to the throne; and his first care, even before he returned to Bohemia, was to enlist the aid of the Pope in his great undertaking. The sovereign pontiff not only gave his consent to the establishing of a university, but also decreed that the degrees conferred should be valid in all Christian lands, and appointed, as chancellor, Arnestus, archbishop of Bohemia. This decree was dated January 26, 1347, and its announcement in Prague was celebrated with great festivities. During the same year lectures were given upon theology, but it was not until the following year that the States of Bohemia, whose approval was earnestly sought, were called to take part in a general assembly. The result of this assembly of the States was Charles the Fourth's famous "Golden Bull" of April 7, 1348, in which he ordered the establishing of a university in the capital of his kingdom, with the faculties of theology, law, medicine, and philosophy, and promised to "endow it richly with goods and royal favor." Teachers and students were invited by open letters from all lands,—the first with liberal promises of support, the latter with the assurance of the same liberties, rights, and usages as were enjoyed in Bologna and Paris. From this date began the existence of the first German university.

The rapid growth of the University of Prague fired the ambitious thoughts of the liberal-minded and active young ruler, Duke Rudolph IV. of Austria. Although in his political actions he was wholly unlike Charles IV., still, in other respects, he had chosen this emperor as his model, and was emulous to found in Vienna a university which should be to Austria what the University of Prague was to Bohemia. The increasing intercourse with the members of the Academy of Paris, the closing of the cloister schools, and gross abuses in the church, greatly facilitated this design. It was not, however, until the 12th of May, 1365, the year before his death, that he was able to perfect his plans, and publish in conjunction with his younger brothers the founder's diploma. This received the papal sanction at Avignon in the following month with respect to the faculties of law, medicine, and philosophy, but a school of theology was excluded until nearly twenty years later. The reason of this exclusion may be partly sought in the contests respecting Nominalism, which was then ably defended by the learned men of Paris, and had already extended its influence,—especially through one of the pupils of William of Ockam, — to Vienna; but much more to the independent conduct of Rudolph, who built churches and bestowed benefices, and, as afterward in the case of Henry VIII. of England, wished to be not simply temporal ruler, but "pope, bishop, and archbishop" in his own dominions. This democratic spirit is clearly seen in the free language of the founder's *diploma*,[1] which will ever be thought a generous tribute to the worth of intellectual culture.

A remarkable difference of opinion has arisen among scholars respecting the year in which the Heidelberg University was founded, though all accounts agree in assigning this honor to elector Ruprecht, I. By some authorities the time of its origin is placed forty years earlier than the date generally accepted, which would give it precedence over all the universities of Germany. Plans for the establishing of a university were evidently long entertained, but the best historical evidence shows conclusively that no formal opening took place until October 18, 1386, — the papal sanction having been obtained in the preceding year. To Marsilius of Inghen, the celebrated Parisian scholar, belongs in great part the merit of its organization, which was similar to that of the University of Paris. As a teacher he became one of its brightest ornaments, and for his distinguished services was repeatedly honored with the highest offices.

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[1] The spirit of the diploma is well conveyed in the following extract: "That, as God had made him ruler of a great land, he ought to render Him thanks, and confer all possible benefits upon the people He had intrusted to his keeping. That he felt himself, therefore, impelled to lay broad plans for his dependent subjects, so that the Creator's goodness might be praised, the true faith be spread, the simple be instructed, the justice of the courts be preserved, human reason be enlightened, public affairs be furthered, and the hearts of men prepared for the illumination of the Holy Spirit. And could the darkness of ignorance and error be banished, mankind, turning to divine wisdom,—which never comes to the sinful soul,—would bring forth out of its treasures both new and old, and bear much fruit upon the earth. That he might then be able to do something for the praise and glory of God, and for the advantage and elevation of the human race, he has determined after most careful consideration to found a university (*studium generale*) in the city of Vienna. That in this university the divine knowledge which we call theology shall be taught and studied; also, the physical, moral, and liberal arts and sciences, canonical and civil law, medicine, and other customary scientific subjects."* Of similar import were the words of his brother and successor in his diploma of 1384: "That he felt himself under deep obligations, because of the princely office which had come to him through the favor of God, to render thanks to the Giver, and have a scrupulous care of the present and eternal welfare of his subjects. That the university lay near his heart, because only through it could the well-being of his people be furthered."* A like spirit pervades the founder's letters of all the earlier and many of the later German universities.

* Translated from Raumer's "Die Deutschen Universitäten."

As Heidelberg had been many times devastated by war, pest, and famine, it was doubtless sought by the founding of the university to secure certain material advantages, and yet the chief motive is probably to be found in the belief of the electors that they would thus confer a lasting favor upon western Germany, as the Rhine provinces, though represented in the Vienna University, saw no possibility of satisfying there their intellectual needs. Before the close of the fourteenth century two other cities of middle Germany, Cologne and Erfurt, sought permission to establish a university. Cologne, at this time in ill-favor with the church on account of continued disobedience to ecclesiastical authority, was justly considered one of the oldest, richest, and most powerful of the free cities of the empire. Erfurt, however, was from 741 A.D. a dependence of the archbishop of Mayence, and first obtained, about the middle of the fourteenth tury, from the emperor Charles IV., a freer position and more extended privileges.

The founders of these universities were the city board of directors, and to them is due the merit of those improvements which distinguish the later from the earlier institutions of Germany. The early history of the University of Cologne is almost wholly unknown, as the archives were long concealed from the public, and are now supposed to have been destroyed. The papal confirmation was obtained in 1388, and it is highly probable that faculties were formed and lectures begun in the course of this year. Four years later the University of Erfurt was founded, but we have little knowledge of it until after 1403, when the teachers and students at Würzburg, abandoning the latter place, went in a body to Erfurt. About this time there came also from Prague large accessions of students who had taken offence at the new doctrines of Huss, so that throughout the fifteenth century this university enjoyed almost uninterrupted prosperity, and became the favored seat of the humanistic studies which were then, through the efforts of John Reuchlin and Erasmus of Rotterdam, beginning to awaken interest throughout Germany. A like prosperity was evidently not enjoyed by the University of Cologne, and, as its history is greatly obscured, it is perhaps just to infer that it never exerted a marked influence upon the intellectual advancement of this century.

Germany had, therefore, gained five universities, or privileged high schools, — that is, close corporations with codes of laws and extended privileges, and entitled to universal recognition of the degrees and honors conferred by them. Now, if we compare these with the schools of the Middle Ages it will clearly appear that the earlier schools were largely the product of circumstances, often owing their existence to the character of a single individual, while the later ones were legally established by the rulers of the land or the authorities of the cities who were able greatly to widen their influence, and secure for them a liberal support.

It is to be noticed that the statutes which aided in the better development of the German universities not only afford us a true picture of university life,—as each faculty had in part its own sharply-defined laws,—but also show clearly how important these sources of information are for the proper understanding of the views entertained by their framers, — the founders of the universities. According to the original idea the founders alone enjoyed the right to complete and revise the statutes, while upon the chancellor, who was the next in authority, devolved the duty of publishing and executing them. But in Prague, after 1360, a different view prevailed, and Archbishop Arnestus, as chancellor for life, claimed the right to introduce new statutes, and in special cases summon to his aid the professors of the different faculties, always reserving to himself the right of decision.

In Vienna the duties and rights of the universities were defined in the diploma of 1365, and in some statutes, issued in the following year, respecting the division into four nations. On account of the early death of the founder the basis for a proper constitution with moderate statutes was first laid by his brother, Albrecht III., in 1384. These were devised by a full assembly of the professors, but were not confirmed until a committee, composed of two from each faculty, had subjected them to a most careful revision. If, in the course of time, it became desirable to introduce improvements, the consent of the princes or conservators of the academical rights must first be obtained.

A similar method was observed in the other universities of the fourteenth century. The oldest Heidelberg statutes, introduced by Marsilius of Inghen, were published at the opening of the institution, and are said to have been a copy of those then in force in Paris. Erfurt possessed from the first full statutes for each faculty, and these appear to have been retained until later centuries, especially in the departments of theology and law, though they were here the more exposed to changes through the influence of the humanistic studies. The power to propose new statutes and revise those already existing was here vested in the faculties, but the city council expressly reserved the right to give or withhold its sanction; also to issue them in its name. The interest which the authorities took in securing liberal endowments, in the formation of the original constitutions and in their preservation, gave assurance that the universities would be permanent, and that their influence would be much greater than that exerted by like institutious in Italy and France. The lack of culture in Germany necessitated Charles IV. to look elsewhere for men to fill the most important chairs in the University of Prague. Still, of nine professors who were invited,—three to the philosophical and two to each of the other faculties of theology, medicine, and law,—the names of all but one would indicate a German ancestry or nationality.[1]

The other Universities are said to have followed the example of Prague. Vienna, and Heidelberg, through the influence of a Buridanus and Marsilius, declared themselves in the widest sense models of Paris, and gave to the Parisian scholars the credit of their success. But in the course of the first century Prague had herself produced men of acknowledged scholarship, who were called to other German universities to meet the ever-increasing demand for qualified instructors, as thousands were already crowding these newly opened doors of learning.[2] Besides liberal endowments of lands and buildings, Charles IV. freed the university from taxation, increased the collection of books for its library, established new professorships, and in many other ways remembered its interests. Private endowments were also added, and from the first there were stipends for needy students, and kind-hearted men left their libraries for the use of those who were able to pay even the moderate charge demanded by the lenders of books. The successor of Charles IV. confirmed all the former privileges of the university, added new endowments, removed all remaining taxes, and enlarged its jurisdiction.

The other universities endeavored to keep pace with that of Prague. Every facility in their power was offered to the teachers, to many of whom a yearly income, to others a definite fee (*pastus*), was secured. In Vienna, Albrecht III. presented a part of the city to the professors and students for their exclusive use, and made it free from taxes and civil jurisdiction. In Prague it was the theological, but in Vienna and Heidelberg the philosophical, faculty which possessed from the first greater privileges and the most important revenues. In Erfurt, also, there were benefactors of the University, but the ever-returning calamities of war and civil feuds placed the revenues in constant jeopardy, and prevented for two centuries and a half any lasting prosperity. With the close of the Forty Years' War and the Peace of Westphalia, in 1648, there came a period more favorable to intellectual activity and university studies.

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[1] According to Voigt (Geschichte der Universität Prag) all studied at Paris, and received there the degree of Master of Arts. Berghauer claims, however, that one of the number was educated at Bologna, and received his call from there.

[2] The number of students in Prague during the first year is given at five thousand; at the time of the death of Charles IV., seven thousand. Heidelberg and Erfurt had at the beginning between five and six hundred.

The Origin of the College.—From the best information that can be obtained, colleges (*collegia*) were common to all the universities of the fourteenth century, but those of Prague were most numerous and richly endowed. As first constituted, they were designed for professors who engaged to deliver certain courses of lectures on condition of receiving their support from property incorporated for this purpose. These *collegiates* lived together as in a cloister, dined at the same table, and, so long as they remained, were forbidden to marry. Usually once a year a manager (*præpositus*) was chosen out of their number, whose duty it was to care for the property intrusted to them and superintend all the household affairs. The college formed a corporate body distinct from the university, though admitting no one who was not a member of it. The oldest and largest of these colleges was the *collegium carolinum* at Prague, which was founded July 30, 1366, and for which it was thought necessary to secure the papal sanction. It was originally intended for only twelve Masters of Arts, — two of whom must be theologians. In the German colleges of this period only teachers were received, while in the Paris Sorbonne and in Oxford and Cambridge both teachers and students, — though the latter did not enjoy equal freedom with the former. It is evident that the chief endeavor of Charles IV. was to assure to the professors a comfortable support, that they might be able to devote themselves more fully to science, and especially, as he expressed it, to the "*beatissimum theologiæ studium.*" By presents of valuable manuscripts he made the colleges the storehouses of the rarest treasures. As the first academic buildings[1] they became in time the receptacles for the libraries and archives; here, too, were the lecture-rooms and the place of assembly for the university senate.

Under his successor the colleges already established were specially favored and several others added, and to the later ones, and probably to all, both teachers and students were admitted. Thus it happened that the greater part of the University was merged into these colleges. In this way it became easier to watch over the industry and deportment of the students, and bitter were the complaints of the *præpositi* upon whom this duty was laid.

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[1] The first university building proper was built in Vienna in 1423.

Not until 1498 do we learn of the formation of a college at Heidelberg, and this, perhaps, ought rather to be classed among the later "seminaries" than among the colleges of this century. Yet, in another way,—that is, through the acquisition of numerous and rare manuscripts,—Heidelberg gained an early advantage over the other Universities of Germany. These manuscripts were the gifts of princes and other literary men who seemed to vie with each other in their zeal to make the "bibliotheca academica" of this university. the first in Europe, and secure its free use to all friends of learning. We have no particulars regarding the colleges at Cologne, and only know that they existed, but in Erfurt the university was rich in these institutions which were privately endowed, the most celebrated being the College of Amplonianus,—named from its founder,—and the "School of Law." Vienna seems also to have established colleges, and to have endeavored in this respect, as in many others, to show herself a rival to Prague, but sufficient means were not at her command.

University Commons (Bursæ). — The *bursæ* played an important part in the school-life of this period. The word is derived from the Greek *βύρσα*, and in the Middle Ages was used to denote the fee paid for promotion, but in the fourteenth century it came to have the meaning of a University Commons. In the two oldest universities a particular quarter of the city was assigned to professors and students, and by such unions as the *bursæ* the object thus designed was more fully attained, since each union had its own president, who was subject to the rector of the university. These unions were also found in the other universities. In Erfurt as early as 1393, or shortly thereafter, several had already been established. For them, as for the colleges, particular statutes were enacted by the princes or private founders. Though the statutes were not always regarded, still it is undeniable that at the beginning these unions operated for the best interests of the Universities, for one of the chief aims sought in establishing them was to bring about a closer personal relation between teachers and students, and thus promote the development of character while seeking to give the highest culture. It was thought that the regulations which governed the unions and entered into all the minutiæ of University life,—determining the price of board and the price of every article purchased by the student, — would leave more time for undisturbed study, and take away the occasion for conflicts between students and citizens, such as had often occurred in

Italy. Great pains were taken to guard the morals of the students, and all hazings and other disorders were either held in check or visited with severe penalties.

And just here it is, perhaps, in place to notice the relation in which the so-called *beani*, or unmatriculated students, stood to those who enjoyed academic freedom. While in Italy and France the former were subjected to many indignities, and were constantly involved in difficulties growing out of these, we find only insignificant traces of anything similar in Germany, though the stringent relations against such disturbances would seem to indicate that occasional outbreaks were not unknown. The unions in *bursæ* were of comparatively short duration. As early as the beginning of the fifteen century they had ceased to be beneficial, and a little later more favorable conditions of culture caused them to disappear altogether.

The University Nations.—The division into four[1] nations, which was similar to that of Paris, is believed to have existed only in the Universities of Prague and Vienna.[2] These nations, in which both teachers and students were united, deserve no unimportant place in the history of the universities. In Prague they received the names of Bohemian, Bavarian, Polish, and Saxon. Under Bohemian were included those who came from Bohemia, Moravia, Hungary, and a part of Silesia; under Bavarian, all from South Germany, Switzerland, and the Tyrol, and in the north from Hesse, Westphalia, a part of Hanover and the Netherlands; under Polish those from the northeast, including Prussia, Lusatia, Thuringia, and other neighboring German lands; and under Saxon those from the remaining portions of Germany, and from Denmark, Sweden, Finland, and other countries to the north. Each of these nations chose a procurator, who represented the highest civil authority, but was subject to the rector. It was the duty of the procurators to call together the nations and and carry out their resolves, to give the oath of office to new members, to keep the seal and statutes, and, as councillors of the rector's court, to maintain the existing rights.

Every nation formed in this way an independent corporation, and held to the university the same relation that the guilds and other orders of the fourteenth and fifteenth centuries did to the cities. The time was evidently favorable for them, and they seem for a long period to have aided rather than hindered the purpose of good government; but when at length the Hussite troubles began, they naturally arrayed themselves according to affinities of race, and became full of danger. The single Slavonic nation (excluding the Polish, which was largely composed of students from Silesia) was the Bohemian, and when the race-line was drawn this one found itself opposed by the three German nations. So violent did this opposition become that the Bohemians were not only deprived of nearly all offices and dignities, but were with difficulty allowed to participate in their own colleges and *bursæ*.

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[1] Why the universities were usually divided into four nations is not known. In Orleans, in France, there were at first ten, but in 1538 these were reduced to four.

[2] Accordiug to Von Raumer (Die Deutschen Universitäten), this division into four nations was found also in Heidelberg, and later in Leipsic.

The dissensions of this period, which nearly proved the ruin of the university, like those which occurred more than a century and a half before in Paris (1229), when large numbers withdrew and went to Oxford and Cambridge, prepared the way for the abrogation of these nations. Their introduction appears to have been forbidden in the later schools of the fourteenth century, and in their stead the faculties,[1] which had been subordinate to the nations, became the dominant power in the universities. In Vienna the faculties are said to have served as a powerful counterpoise to the corporative spirit which had its origin in Italy and France, and, in the latest German University of this century, the constitution, departing from former usage, limited the jurisdiction to the academical senate, and made the election of the rector independent of the caprice of the students.

(CONCLUDED IN NEXT NUMBER.)

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[1] *Facultas* was originally used to denote the separate scientific departments of study embraced in the bounds of University instruction. — SCHNABEL: *Geschichte der jurid. Facultät zu Prag.*

SOCIETY TO ENCOURAGE STUDIES AT HOME.

BY LILLIAN M. MUNGER, WELLESLEY, MASS.

One turns with interest, in these days which have been so alive to the subject of the education of women, to the formation of a society, the first of its kind in the country, the object of which is to aid and encourage the intellectual development of young women. As stated in the preamble, the purpose of the society is " to induce ladies to form the habit of devoting some part of every day to study of a systematic and thorough kind." In the ten years since the birth of this organization, it has grown into a flourishing alliance, doing in an exceedingly quiet way an immense amount of work.

In the summer of 1873 there came before the attention of the present secretary, Miss Ticknor of Boston, a notice of an English organization, called the " Society for the Encouragement of Home Study." Upon exchange of letters it was found that no correspondence was offered ; that a course of reading or study was presented to the student, to be pursued for one year without assistance ; and that at the end of that time students were expected to go to London for a competitive examination.

The desire to work out the idea suggested by the title of the English society resulted in the formation of a committee of ten persons, six of its members undertaking the entire correspondence with forty-five applicants, who entered as students the first term. Of the original number, Dr. Samuel Eliot, Miss A. E. Ticknor, Mrs. Ticknor, Miss K. P. Loring, and Mrs. Louis Agassiz still retain their connection with the committee. From this beginning has grown the present organization, which, in the tenth term, consisted of 768 students and 193 correspondents, comprising six departments, with numerous sections and sub-sections.

The society began its existence with only two principles established ; viz., that these should *not* be competitive examinations, and that there *should* be correspondence. The secretary thus writes :

> "We never adopted the methods of the English society, whose similar name gave us, in 1873, the idea for ours. Instead of confining our offers of help,—as the English society did at that time,—to the wealthy class only, we at once endeavored to interest all classes, for we thought all needed us, though for different reasons, as all are liable to the consciousness of a de-

ficiency, general or special, in their education, and all may feel the need of encouragement to overcome some obstacle, it may be in want of opportunity, or it may be in lack of energy to use existing opportunities. Instead of mere plans for work without correspondence, and the irksome requirement of presence at headquarters at the end of each year for competitive examinations and prizes, we adopted monthly correspondence, with frequent tests of results, desiring to produce intellectual habits and resources, without competition and without even fostering the desire to reach certain points at certain moments."

The unparalleled success of the undertaking may be referred to three general causes: Foremost of all, to its unique system of correspondents; second, to the unembarrassed use of its library; and third, to the thoroughness of its methods of instruction, and the sound sense with which these have been applied. The ladies of the staff have not failed to recognize, in their adoption of methods, the subservient position which mere acquisition of knowledge deserves, and have not for a moment lost sight of the end to be produced, but have made their means wisely effective in accomplishment of that purpose.

As an aid to those students who have not access to public libraries, or who are unable to purchase freely, the Lending Library in Boston is especially noteworthy. From this source students can obtain whatever books they need by the payment of one-half cent per day and postage returning. The library has grown with the society, the larger part of its volumes having been bought with receipts from annual fees, these being the exceedingly small sum of three dollars a year for each student. The circulation during the last year amounted to 1,116 volumes, and extended into Canada, Texas, Nova Scotia, California, and numerous places less distant. It is quite remarkable that in nine years, in a traveling circuit coëxtensive with the territorial area of the United States, only twelve volumes have been lost, a fact commendatory both to our postal system and to the honor of those who borrow. The library also furnishes the means for pursuing supplementary courses of reading, which, by aiding the imagination in the grasp of less interesting subject-matter, has greatly increased the efficiency of its workings,

In addition to the library proper, the ladies of the art department have made a collection of some fifty volumes of illustrations, consisting of etchings, engravings, and photographs, ranging from the art of Egypt and Assyria to that of the present time. Their arrival into homes hundreds of miles from any museum marks a day long to be remembered by the ambitious student. It should be added, moreover, that these illustrations are sent to students entirely free of cost, except postage or express returning.

Great discretion has been shown by the heads of departments in the choice of correspondents, as the associate teachers are called. They are guided in their selection by information which they receive from students, as to how old they are, as to the character of their education, whether public or private, and whether at the time of application they are teachers. The enthusiastic expressions of students concerning their correspondents bear witness to the fact that extraordinary success has attended the manipulation of this part of the organization, in itself a most delicate and difficult matter to adjust.

But little can be said of the methods adopted by individual departments. These, of course, while in accordance with the general principles of the society, are modified to meet the nature of the department and the individual needs of the student. The "Directions for Study," from which the following extract has been made, and which is sent to each new student, introduces us to an underlying principle as old as the society itself, being indeed one of the first established:

> "Bear in mind, while you read, that you are to make the notes later, and try to fix the main facts in your memory. It is more desirable to remember what you read, than to read much. The first object in note-making is to secure a clear, well-defined idea of your subject. You should, therefore, select the leading facts from what you remember, and note these by detached words or abbreviations, indicating the outline of what you have read and the chief points of the author."

Students are unanimous in declaring this custom to be a significant help not only in fixing securely and systematizing what has been already learned, but also in acquiring the ability to thus outline the results of their reading, and logically classify them. Letters are the tools by which this system of instruction is prosecuted, more than 12,000 having passed between correspondents and teachers during the past term. As a result of this intimate association there springs up a friendship between them which characterizes the intimacy of two women when the one finds in the other a maturity of thought, experience, and conviction, to be appropriated by the unformed mind as a guidance and an inspiration. Its effect can only be comprehended by those whose lives have thus received this illumination.

In one of her reports the Secretary thus defines the scope of the society:

> "Many industries, and all grades of social position, — above absolute

penury and ignorance,—appear among us, and, except for the distinction of sex, we regard no differences, making no account of age or wealth, color or race. A telegraph operator, a compositor, a matron of a public institution, a railroad treasurer, acting also as paymaster and going up and down her road in that capacity, a colored teacher at the South, another colored woman well married at the North (some of these among our best students), can have with us the same opportunities as their wealthier sisters, who, like them, value their studies with us as means to higher development, wherein wealth or poverty may hinder alike. In age we make no distinction, except by excluding the very young; and while we find more than three-fourths of our students between 20 and 50 years old (more than half are between 20 and 30, and one-fourth between 30 and 50), there are a few whom we feel inclined to honor with special respect for studying after they have passed their half-century. Mothers join us expressly on account of the young children to whom they wish to make study attractive; and grandmothers have joined us in order to be associated in the same interest."

Since the publication of the report just quoted, at the request of the Alumnal Association of Colleges, arrangements have been made whereby college graduates can avail themselves of advanced courses of study; one young lady, indeed, a candidate for a second degree, taking her entire course with the society.

Thus briefly have we outlined the career of a society which, in the character and amount of work it does, is unsurpassed. When we consider that much of its duty is the uninteresting task of reading and correcting written papers, — the most irksome part of her business, the public school teacher finds it,—and that in addition is the necessity of communicating by letter to each student, pointing out errors, suggesting, and, in many cases, remodeling the course of study to meet peculiar needs; and when we consider that this work is done entirely without remuneration, and that pupils and teachers are strangers to each other, we cannot fail to recognize in this organization one of the most marvelous of the philanthropic movements of the age.

FOREIGN NOTES.

ENGLAND AND WALES.—*Elementary Education.*—The report of the Education Department to Parliament for the year ending August 31, 1883, attracts unusual attention, as it affords some means of testing the working of the new code. This code, it will be remembered, went into operation May 1, 1883, consequently the return includes eight months under the old code and four under the new. It is computed that there are over five and a half million boys and girls in England and Wales between the ages of five and fourteen. Making the usual deductions, and adding the number below five enrolled on the school-registers, there are above five million children to be provided with school places. At present there is accommodation for four and two-third millions. The number of names on the school-registers increases, but in a diminishing ratio, — the increase being 84,000 against 144,000 in 1882. Average attendance has been steadily falling off for the last five or six years; thus the increase between 1876 and 1878 was 420,000; between 1878 and 1880, 345,000; between 1880 and 1882, 264,000; and for the single year, 1883, only 112,000. Average attendance, however, appears to be improving under the new code; for while in the eight months ending April 30, 1883, it was only 67½ per cent. of the enrollment in the schools examined in the four following months, it rose to 73¾ per cent. nearly. "Half-timers," as a class, are becoming extinct at the rate of 7 per cent. per annum, while the enrollment of children between 10 and 11 years old steadily increases. The teachers employed number nearly 80,000. some two-thirds of whom are women. About half the teachers are regularly certificated, and this class grows at the rate of 2,000 a year. The number of assistant teachers also steadily increases, while that of pupil teachers diminishes. The average salary of masters is falling; it stands at present at £119 a year. For the first eight months included in the return the proportion which the number of children examined in the three R's bore to the average attendance was 70 per cent., while the corresponding percentage for the four following months was 78. The percentage of passes which, under the old code, was within a fraction of 85, fell, as had been predicted, under the new code to 80. That the new code is calculated to repress over-ambition in the matter of higher studies, is evident from the falling off in the number of children examined in specific subjects. Up to May, 1883, the number reached 140,000, while in the four months following it fell to less than 20,000. The results under the merit grant, the new feature of the code, show that the larger the school is the greater its chances in this respect. The grant, which varies from nothing to 3*s.*, averaged 1*s.* 9*d.* a head. With reference to income and expenditure, it appears that voluntary subscriptions were £717,000, a decrease of £8,000 below the same for 1882. School-pence increased by £73,000, amounting in the total to

£1,660,000. The rates, too, have increased,—reaching in 1883 the sum of £840,000. The cost per head equals 37*s*., but the gross expenditure was met by the income, leaving a balance of £12,000.

Estimates for Ensuing Year.—The following are the education estimates for the ensuing financial year: Public Education, England, £3,016,167; Scotland, £475,413; Ireland, £732,627; Science and Art Department, £364,825; British Museum, £152,133; Learned Societies, £23,400; London University, £12,346; Scotch Universities, £19,031; Welsh University College, £8,000; Queen's Colleges, Ireland, £14,378; Irish Teachers' Pension Office, £1,995; Irish Endowed Schools Commissioners, £670.

FRANCE.—*Paul Bert's Bill.*—Paul Bert's Primary Education Bill, which has passed the Chamber of Deputies, is a radical measure for secularizing public instruction. It debars clergymen and *congréganistes* of both sexes from all interference with the State schools, as teachers, as inspectors, or as members of the educational councils. If the bill becomes law in its present shape the Government will be allowed five years in which to supersede by lay teachers 3,000 male *congréganistes* and 20,000 nuns, who, at present, have about 12,000 schools under their entire control, and about 6,000 others under their partial management. The clause of the bill, authorizing the appointment of primary teachers by the prefects, excited hot discussion, but was finally passed. The clause providing that the departmental councils shall be open to women, — viz., to the head mistresses of the normal schools,—was passed by 391 to 72 votes. The proposition to increase the stipends of elementary teachers at once by 19,000,000 francs, and eventually by 40,000,000 francs, met with decided opposition. While it was conceded that the teachers are under-paid, it was maintained that the State of the finances does not warrant such an additional burden. Jules Ferry surmounted the difficulty by a motion to defer this financial clause till the Budget comes on in the autumn, when the revenue returns will show whether there is likely to be any margin. In the debates upon the bill, Mr. Bert was outspoken in his opposition to the church, which he characterized as the great enemy of progress. The Chamber was not prepared to adopt all his extreme measures; for instance, his proposition to confiscate all the endowments given to schools, whether by donation or bequest, with the object of promoting religious education, was lost. Forced to make concessions on this point, he proposed that all living donors should be allowed to withdraw their donations within six months. The Chamber went farther, extending the time to a year. While there are excellent features in the bill, the rancor that it betrays is deprecated in many quarters, and it is probable that the Senate will take ample time to review and modify the provisions.

Finances. — Appropriations for public instruction continue on the liberal scale that has prevailed for some years. The appropriation for primary instruction for 1884 is very nearly 102,000,000 francs,—above $19,000,000. This represents about two-thirds of the entire budget. The report of the

Minister of Public Instruction, with reference to the funds created for the purpose of constructing, repairing, and furnishing school-buildings, shows that, from 1880 to 1883 inclusive, the State made appropriations as follows: In behalf of lycées, communal colleges for boys and secondary institutions for girls, under the head of subventions, 68,571,668.24 francs; under the head of loans, 24,851,400 francs. In behalf of normal schools and primary schools, for the years 1878–83, inclusive, the appropriations were: Subventions, 145,246,203 francs; loans, 152,823,900 francs. The sums already disbursed from these appropriations reach a total of 241,626,682 fr.

RUSSIA.—Russia possesses 26,000 elementary schools which enroll only a little above one million pupils. In the gymnasia and "real" schools, under the control of the Ministry of Public Instruction, about 70,000 are enrolled, and in the district and town institutions for secondary instruction, about 30,000 more.

The universities enroll about ten thousand; they also comprise very elaborate provision for higher education. The St. Petersburg University, for example, possesses four faculties, embracing a wide range of subjects. In addition to the Historical, Mathematical, Philological, Juridicial, and Physical departments, there is a faculty specially devoted to Oriental languages, in which Sanskrit, Persian, Arabian, etc., may be learned from native teachers. St. Petersburg lacks a medical faculty, hence Moscow becomes the center of that profession.

Elementary education is confessedly in a very backward state. A project is now on foot to establish a number of superior primary schools for girls, the courses of the gymnasia and pro-gymnasia being quite unsuited to the girls, who must eventually work for a livelihood. Such a school was established in St. Petersburg in 1882. Pupils are admitted between 9 and 11 years of age. The course, which covers four years, includes religion, the Russian tongue, arithmetic, geography, writing, natural history, drawing, geometry, national history, singing. and needlework.

Over-pressure.—Dr. Holst, of Riga, has just published a pamphlet on the treatment of hysteria and other nervous diseases. The increase of these in several countries he believes largely due to the system of cramming in schools. The development of the brain is either retarded or distorted by the unnatural strain; girls are more seriously injured by the process than boys. Dr. Holst acknowledges the good effect of proper instruction in producing healthy and harmonious development, but insists upon larger provision for amusement and healthy exercise.

AUSTRIA.—The Vienna Institute for Instruction in Textile Industry holds an important place in the commercial interests of Austria. The following description of it is from information recently received at the Bureau of Education: On the ground floor is a large machinery hall, where two master workmen give practical instruction. The hand-looms and power-looms are separated by a railing. By the inspection of these machines a knowledge of the whole mechanical part of the art is obtained, while actual work at the loom supplies the needed practice. The next two floors contain the lecture-rooms, which are fitted up in accordance with modern requirements. All the rooms are noticeable for their size and the excellence of their lighting. The institution is divided into four parts, according to the degree of education of the pupils and the branches they are pursuing. These are the special school proper, and the industrial review, lace, and embroidery school, the last three being Sunday and evening courses for master workmen. The special course occupies two years. Drawing and weaving are the chief subjects of study in all the courses, particular attention being given to outline-drawing and painting from patterns. The study of motors and descriptive geometry as part of mechanical technics, the technology of spinning materials, the spinning process, instruction in the commercial values of materials, and microscopical examination of the fibres and tissues form part of the general plan of instruction. In the second year the experience already acquired is extended to the theory of the Jacquard machine, and mechanical weaving in general, with a view to enabling the student to leave the school at the end of the year with a good knowledge of all branches of the textile industry.

Belgium.—A royal decree, dated January 16, 1884, fixes the salaries of primary school teachers in Belgium. The teachers are arranged in eight classes, and a minimum and maximum salary affixed to each. The latter is realized after twenty years' service by a stated increase every five years. The range of salaries in the eight classes is as follows:

	Minimum.	*Maximum.*
Masters, - -	1,200 to 3,800 fr.	1,800 to 4,600 fr.
Sub-Masters, - -	1,000 to 1,700 fr.	1,600 to 3,000 fr.
Mistresses, - -	1,200 to 3,500 fr.	1,800 to 4,200 fr.
Sub Mistresses, - -	1,000 to 1,500 fr.	1,600 to 2,500 fr.

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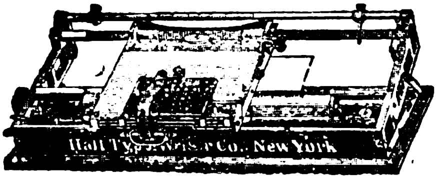
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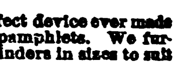

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EDUCATION.

No. VI.—July, 1884.

THE ORDER OF SCIENTIFIC STUDY.

BY WILLIAM MORTON PAYNE, CHICAGO.

The studies pursued in high schools may be said to fall, in a general way, into four classes, which are, perhaps, of about equal importance, both as sources of knowledge and as means of mental development; of these the various branches of Mathematics, Algebra, Geometry, and Trigonometry constitute the first class, and with them may be placed Astronomy, as having the mathematical element largely predominant. The various studies, commonly known as the "sciences," go to make up the second class; foreign languages, ancient and modern, the third; while the fourth comprises History, political and literary, Civil Government, and Political Economy. Each of these classes of studies has its own specific contribution to make to the mental possessions of the student, and each, in its own peculiar way, aids him to acquire the power to think for himself, which should be, above all else, the object of any education below that of the University. If it may be assumed that four studies, one of each class, are not too many to engage the attention of the student at any one time, then a well-balanced course of high-school study, whether it extend over a period of two, three, or four years, may include such branches as shall give him, throughout the time of his course, work in each of these four departments. A course of study framed upon this principle would, perhaps, be best suited to the requirements of the average mind, and from the very nature of the case such a course must be to a certain extent rigid, and can take no account of exceptional minds.

If the pursuit of four studies at the same time be thought too great a tax upon the capacities of all, then the study of an ancient or modern language may be made optional, as is sometimes done in high schools. It is a question, however, whether it be wise to introduce any studies of an optional character into the courses of schools which aim to do no more than the large majority of high schools in this country. There is unquestionably a time in the development of every young man and woman when a definitely prescribed mental diet ceases to exert the salutary influence which it has over the untrained mind, and becomes a hindrance to the display of its best energies. Then comes a time with every mind when it is best that it *should* follow its own bent. But this time rarely arrives until years of school-life have trained and developed harmoniously the mental faculties, and have given the power to discriminate between a natural predilection and a passing fancy, and it may be doubted if it comes with sufficient frequency to students of the high school to warrant the qualification of any part of the course as optional.

Having assumed, then, that our high-school course should represent equally the four classes of studies before mentioned, there remain two problems to be solved: first, that of the particular studies which should be selected in each department, and the amount of time to be devoted to each; and, second, that of the order in which the studies in each of the departments should be pursued. To solve these problems, with relation to the first, third, and fourth of our classes, is a comparatively simple matter; with the second, or that which includes the so-called sciences, the solution becomes much more difficult. There is a certain natural sequence in studies of a mathematical nature, for instance, which is not so apparent in those of a scientific nature. The consideration of this sequence in the latter case will form the subject of the present essay. To select the studies of this class most needed in a course whose period is fixed, and to apportion the given time among them, is not as difficult as it is to determine the order in which they shall be taken up. Any one who is in doubt concerning the existence of such a difficulty need only compare the courses of study of any half-dozen high schools, taken at random, or indeed the various schemes which have, during the past six or eight years, been at different times adopted for the high schools of Chicago, to be convinced that it is a question concerning which a difference of opinion is at least possible. The cause of the difficulty, although two-fold, is simple. In this connection the structure of mathematical science may be compared to an edifice made of stones piled one upon another. Each is supported by those beneath, and itself supports those above. But the structure, of which the various branches of physical and natural science are the constituent parts, is rather to be compared to an organism, in which each part has connections with, and more or less intimately depends upon, every other. The stone pile has a beginning and an end, but every part of the organism is at once beginning and end. The two-fold difficulty before mentioned arises, first, from the impossibility of arranging the various branches of physical and natural science in such an order that each shall pre-suppose only those placed before it ; and, second, from the fact that science being, as it were, a daughter of mathematics, its most fundamental branches pre-suppose a certain amount of mathematical knowledge, and regard must be had to this in planning a course of study. Of the many ways in which the half-dozen or more of scientific studies which are commonly taken up in our high schools may be arranged, or in fact are arranged in different cases, one must unquestionably be superior to all the others,—there can be but one best way. To find out this way, or, at least, to approximate to it, will be regarded by the one who knows the value of system in education as of no little importance.

Unmindful, for the present, of the second phase of our difficulty, we will first attempt to present an outline of what seems to us to be the proper order to be followed in a course of elementary scientific study as nearly as it is possible to indicate by means of anything that has a beginning and an end, that which has neither the one nor the other.

As first and most fundamental of all, then, we will place the study of Physical Science in its three branches, — Dynamics, Physics, and Chemistry, — to be prefaced, of course, by a consideration of the nature and general properties of matter. We place this first of all, because it can be taught, and taught thoroughly, with little reference to anything but mathematics, while, on the other hand, there is no other branch of science whatsoever, which can be properly taught without repeated appeals either direct or implied, to a pre-supposed knowledge of the laws of matter and energy as developed in Physical Science. The order in which its three divisions should be taken up is sufficiently apparent, for, after having obtained an idea of the general properties of matter, the study of masses and mechanical motion naturally follows, and this is, in turn, as naturally followed by a consideration of molecules and of molecular motion. The extent to which these studies should be carried is, of course, a topic whose consideration has no place here, depending as it does upon the amount of time at the disposal of the teacher and the abilities of the class. The special application of mechanical principles to machinery is a subject to be taken up at length by technical schools, but which does not belong to schools whose aim is general education. When the domain of molecular science, or of Physics proper, has been traversed, the constitution of the molecules themselves becomes the theme for study, and, supported by the physical principles already acquired, the student is ready to form an intelligent idea of Chemistry, its character and scope.

It is of extreme importance that the line between molar, molecular, and atomic science should be sharply drawn by keeping ever in view the distinction between masses, molecules, and atoms, and the forms of energy residing in each ; so that, for example, the student shall be able to understand that, while a mass of matter moving through the air has, as a whole, mechanical energy of motion, its molecules have, besides, peculiar motions in relation to each other and energies of their own, while the very atoms of which each one of those molecules is composed have in their turn motions and energies peculiar to themselves. For a single moment sight should not be lost of those principles of the correlation and conservation of energy which underlie all the laws of physical science That Dynamics should precede Physics, and that this should precede Chemistry, follows from the principle that in any study it is best for the individual to take the path by which the race has before him arrived at the conclusion which he seeks to establish for himself, and this path is necessarily from that which is obvious to that which, however obvious it may eventually become, is not so at first. Much was known of masses of matter and their properties before the conception of molecules or minute particles assumed a scientific form, and it was later still that the conception of component particles was enlarged by drawing the distinction between molecules and ultimate atoms. The study of masses reveals qualities which cannot be explained by the principles of Dynamics, and the conception of the molecule became necessary. The study of molecules again reveals qualities which cannot be explained by the laws of Physics, and the conception of the atom is required upon which to found a new science.

We thus see that the order in which we have placed these studies is the order in which they naturally present themselves to the mind; and that to take them up in the reverse order, — that is, to place Chemistry before Physics,— would be a proceeding as unwarrantable as in Geometry to start with the theorems, and by induction determine the axioms ; or, in History, to begin with the present year and go backward. Either might be an ingenious exercise, but would hardly be the best way for a beginner to approach the study in question. Yet, if History were merely a collection of facts, having no relations beyond those of contiguity in time, it would make little difference where we were to begin or where we were to leave off. In every study the facts are subordinate, more or less, to the principles which they illustrate, and perhaps in no other are they as wholly unessential, as purely incidental, as in physical science; but the fact that every chemical text-book known to the writer either tacitly assumes a knowledge of physical principles on the part of the one who will engage in its study, or is actually prefaced by what in itself constitutes an elaborate treatise upon Physics, is, perhaps, sufficient to show that, as between Physics and Chemistry, there can be little question of precedence. With hardly an exception the very terms used familiarly in descriptive Chemistry are such as require to be defined in Physics.

What is known as Inorganic Chemistry should come first, and should include whatever of Mineralogy it is desirable to teach. In the successive study of the elements, that of carbon may be placed last, and will form an easy transition from the study of those compounds which are essentially inorganic to that of those which are found naturally only as products of the exercise of the functions of vegetable and animal organisms. The study of those compounds having been entered upon, the student should be shown the intimate connection between the organic and the inorganic world; he should be shown, by synthetic experiments, if possible, that the chemist in his laboratory can repeat the processes by which such compounds are formed in nature, and that the albumen-molecule differs from the water-molecule only in its greater complexity. He should study organic compounds by beginning with the simpler forms, and advancing to the more complex, noting carefully that with increasing complexity comes increasing instability, until having reached the very borderland between the dead and the living, he can comprehend, as well as it is possible to comprehend, the meaning of that which we call life; of that new element which is here added as an additional factor in the problems which he has to solve; of that new transformation of energy by virtue of which molecules of the highest degree of instability assume the power of collecting together the atoms of the simpler molecules about them, of rearranging those atoms, and of impressing upon them their own highly complex molecular form. He will here see the phenomena of life manifested in their simplest and most *naïve* form; he will have left the domain of Chemistry, and will stand in the gateway to that of Biology, — the science of life. He will see that just as the simpler molecules which he has heretofore been studying have had inherent in themselves a tendency to arrangement in the form of crystals, so these more complex molecules which now demand his attention have a tendency to arrangement in the form of cells, which, however, unlike the crystals, have the power of assimilating from the surrounding medium the materials needed to build other cells of the same kind, and thus the power of reproducing themselves to an indefinite extent.

Having briefly studied those forms which are completely homogeneous, and whose parts differ only in function as they happen to be on the inside or the outside of the cell, he will advance to those which present differentiation of structure and consequently of function, and here he will see in its simplest form that system of division of labor which has caused all living beings to be known as organized bodies. Having noted the point at which this system has its first rude beginnings, the work before him is to follow it out in its harmonious development by the successive study of higher and higher forms, observing that the very term " higher form " is synonymous with increased division of labor and the consequently greater differentiation of function, and that such increased division of labor and differentiation of function is all that distinguishes the highest organism from the lowest.

Before going very far up in the scale, however, his attention will be called to the fact that the various forms of life which he is study ing tend to fall into two distinct classes, which, as he ascends farther, diverge more and more, until at last, whatever difficulty he may at first have experienced in assigning a given organism to the proper class, has entirely disappeared, and the separation of the plant from the animal is complete. He will note that the general, although by no means the universal, characteristics of the one class are fixedness of position, a cell-wall composed of cellulose, assimilation of carbon and rejection of oxygen ; as opposed to freedom of motion, a cell-wall containing nitrogen, and the assimilation of oxygen and rejection of carbon of the other. Having then clearly in view the distinction between the two great classes of organized existences, he will see that the science of Biology has two grand divisions, to the first of which, Phytology or Botany, he is about to proceed, leaving the second, Zoölogy, to be taken up at a subsequent period. Botany, as well as the Zoölogy which follows it, should be studied in three aspects, the morphological, the physiological, and the geographical. To the latter, or geographical aspect, it is, perhaps, not advisable to devote much time or attention, the more general features of the distribution of plants and animals according to climate, altitude, etc., being sufficient. An acquaintance in detail with the geographical distribution of living forms is doubtless a valuable thing to possess if one has room for it, but it belongs to that class of knowledge which is valuable only as knowledge, which burdens the memory while adding nothing of the mental powers, and which, in the opinion of the writer, it is desirable to avoid as far as possible in a course of high-school instruction. On the other hand, the study of the morphological part of Botany and Zoölogy appeals directly to those faculties which most need cultivation, the faculties of observation, and this in a peculiar way and one altogether different from that in which they are called upon by experimental Physics and Chemistry. The mathematical exactness of the observations called for by physical science becomes here less prominent, while there is given occasion for a freer and wider exercise of the judgment. The study of classification, and the principles upon which it is based, should then be paramount in the consideration of these subjects as the special contribution that it makes to the mental powers is peculiar, and one whose place could be supplied by the study of hardly any others. At the same time that the observant powers and the judgment are thus receiving this eminently salutary training from the study of the forms of the parts of organisms, the study of their functions is bringing to the attention of the student a constant succession of novel applications of well-known physical and chemical principles, thus fixing them more firmly upon the mind, and, by presenting them in new aspects, widening his previously somewhat narrow conceptions of them.

Directly following these studies, or, perhaps, parallel with them, should come Geology, or, at least, that part of it which considers the fossil remains of organized bodies, the strictly mineral part of it being more properly considered as a branch of Inorganic Chemistry. The study of fossil plants and animals might indeed be pursued at the same time with the study of living forms, each organism being referred to its proper place in the scale of life; and there would undoubtedly be gained by this a more comprehensive conception of the serial continuity of living forms, and of the necessarily artificial character of all schemes of classification. But the fact that the fauna and flora of past epochs serve to fill up blank spaces and supply missing links in the scheme of living forms can just as well be pointed out if they are studied by themselves; and while their study in connection with living forms would serve to develope no new principles, but merely to emphasize principles which are made sufficiently evident without their testimony; by making them the object of separate study, there is provided a means of inquiring more closely than would otherwise be convenient into the physical characteristic of the various geologic epochs, and the element of time, which is entirely ignored in the study of Botany and Zoölogy, is given its true significance. The intellectual advantages of thus making a special study of the sequence in the development of organic forms, imperfect as the materials are, and broken as the sequence of necessity is, are much greater than those to be derived, and that only at the sacrifice of these, from a general view of all known forms properly arranged, but without regard to sequence in point of time. The principle of development is to biological science what the principle of the correlation and conservation of energy is to physical science,—the one central fact, to which everything, more or less directly, has reference, and like the principle of the correlation and conservation of energy, it is something to be seen by each one for himself if the facts are properly arranged for presentation. Having thus become acquainted with the forms of life, both past and present, and with the natural methods of classification, and having obtained a general idea of the organs of living things in their physiological aspect, the student will do well to devote a few months to the special and detailed study of the physiology of that most complicated of all organisms, known to naturalists as *Homo sapiens.*

The study of Human Physiology may be considered in two ways, one of which by no means excludes the other. Considered in one way it is a collection of certain facts in the structure and functions of the human body, which it is in the highest degree important, — nay, essential, — that every one should possess. The knowledge of these facts is frequently provided for by oral or other instruction given in the grades preceding those of the high school This is an exceedingly wise provision, and does not preclude the pursuance of the study of physiology in an altogether different way when the mind of the student is sufficiently matured. Considered in this other way, it is a branch of knowledge whose successful pursuit requires the greatest possible familiarity with physical and chemical principles and with those of biological science, together with an acquaintance as intimate as possible with the art of experiment, its methods and resources, and added to all this a degree of mental development fitting the student to grapple with problems of a much more complicated nature than any heretofore laying claim to his attention. Such is the general character of the only preparation at all adequate to the pursuit of any other than a very superficial acquaintance with the details of the vital processes of man. This being the case, and the main intellectual advantages of the study of Human Physiology being such as are only available to the mind already well trained, there is but one place that it can suitably occupy in the scheme of scientific studies,—the last and highest place in the list. Any attempt to place it lower than this will so detract from its efficiency as an aid to mental development as to leave little reason for giving it any consideration at all. It is truly styled by Schopenhauer as the summit of all the sciences. Its value is not, any more than that of any other science, in its being a collection of facts. It is a collection of principles, each of which is an appeal to the highest of the mental powers. It must be placed at such a stage that the development of those faculties to which it appeals shall not be wholly inadequate to the demands made upon them.

Such a course as we have here outlined, comprising Dynamics, Physics, Chemistry, Botany, Zoölogy, Geology, and Human Physiology, ought to extend throughout the length of a high-school course of four years duration ; nor, in the opinion of the writer, can even partial justice be done it in less time, and it would be better, whenever the time is limited to less than that period, to attempt only a part of it. All attempts to provide for the needs of the large number of those who never complete their high-school education, by the partial consideration of topics during the first part of the course, leaving the rest to be taken up at some future time, or by the erection of special shorter courses, crowded with studies, to no one of which sufficient time is given to admit even of a conception of its scope and methods, are cases of misdirected energy. The student who can only spend two years within the walls of the high school will be better off when he leaves it if he has started out, just as he would have done, with the prospect of an indefinitely extended school education before him, than he will be if his instruction has been especially shaped with reference to the short time which he can devote to receiving it, and if at the end, as is so frequently the case, he finds himself in the possession of a strange medley of facts and principles drawn from half-a-dozen sciences, but without any orderly arrangement. To the one who has thus started right whole departments of knowledge may be sealed books, but he will have a fair conception of physical science at least; and the systematic, and, at any rate, something more than superficial study of this one subject will give him a mental training that will help him amazingly in the study of any other, whether in school or out of it. The interests of those who are unable to complete the public-school course of study are entitled to the most careful consideration, as, in numbers, they so greatly outrank those who persevere to the end, and were it a question to be decided by numerical strength alone, their interests should be paramount; but it is the object of every public-school system to provide for all who will avail themselves of it, an education which, within certain well-defined limits, is complete; and, even in the separate divisions of this system,—as, for instance, in the high-school department,—there is a sort of secondary completeness to be aimed at which is equally well defined. If this, then, is confessedly the object of the school system as a whole, and of each of its departments as well, it should never be lost sight of, and especial care should be taken not to lose sight of it in considering the interests of the large majority with regard to which the object is not attained. Happily, however, this conflict of interests is more apparent than real; there is a best way of building the educational edifice, and of constructing every part of it, from the foundation up, and reflection cannot fail to bring the conviction, that, however desirable a tall and imposing structure may be, yet a well-laid foundation and a substantially built first story, even if the building go no higher, are better than a structure as high as the tower of Babel, hastily and imperfectly built and incapable of resisting the storms which it is sure to encounter. The former is at all events greatly begun, and ever presents a firm base upon which to build further, so that if the work be suspended for years it may at any time be resumed, and the edifice gradually rise to completion, while the latter can, it is true, be patched up here and there and gradually strengthened; but the work at best must be done clumsily, and in many cases it will be necessary to pull the building down, strengthen the foundation, and begin over again. To somewhat stretch the metaphor, the confusion of tongues which rewarded the builders of the tower of Babel may be said to symbolize the confusion of ideas necessarily attendant upon the education which attempts to crowd into one year the subjects to which two years are no more than adequate.

Having thus discussed the question of the order to be followed in the pursuit of scientific studies in its general outlines, there still remains much of detail; as, for example, the order of topics in each particular study, for most of our text-books are written not with reference to any general system, but each with reference to a system of its own. Instruction in these studies in accordance with the general scheme here proposed would necessitate a re-arrangement of topics in many existing text-books. As it is not within the scope of this essay to enter into such detailed consideration of the subject, we will direct our attention to some secondary questions which naturally arise in this connection. Many high-school courses embrace a study which is called Physical Geography, and it will naturally be asked what we propose to do with it. We suspect that the fact that this Physical Geography has any separate place whatsoever in these courses arises from defective text-books in the various branches of science; for it is nothing but a collection of scientific fragments drawn from many sources, which fragments, put together, show little kinship and form a book of so miscellaneous a character that there is often question of where it should be placed in the course of study. This will be seen by observing the position which it occupies in the courses of a few different schools taken at random, or in the fact that, after enjoying for many years a position in the first year of the course of study in the high school of Chicago, it was suddenly and unceremoniously transferred to the fourth or last year, where it remained for a while, when it was restored to its former humble position.

The only value of such a book is for use as a collection of valuable information in the lower schools. Most of the contents are facts concerning natural phenomena which may be imparted to scholars of the lower grades merely as facts without attempting an explanation of the principles which underlie them. If carefully dissected, however, its various parts will be found to fit into places which are either vacant or imperfectly filled in other text-books; that part of it which relates to the actual physical conformation of the earth should be studied in connection with the political geography of the grammar grades, thus making it something more than a mere enumeration of unsystematized facts, and lending to the study of Geography something of the interest that can never attach to anything which exercises the memory without stimulating reflection; that part of it which relates to winds, tides, etc., as well as the meteorological part, belongs to the study of Physics, and only in this connection can such phenomena be satisfactorily considered; the enumeration of the rocks and the statement of their composition belongs to Chemistry, and the detailed account of those natural phenomena which result in permanently changing the physical features of the earth belongs either to physical science or to the special study of Geology, which, as far as its relation to such changes is concerned, is merely the study of the application of physical principles to the special conditions offered by the earth's crust; that part which relates to plant and animal life upon the earth is simply distributive Botany and Zoölogy, and to be considered as a part of those studies.

Astronomy may, as before suggested, be considered as a mathematical study, and taken up as the last topic considered under that head; it will then come toward the latter end of the course, at a great a tax upon the capacities of all, then the study of an ancient or modern language may be made optional, as is sometimes done in high schools. It is a question, however, whether it be wise to introduce any studies of an optional character into the courses of schools which aim to do no more than the large majority of high schools in this country. There is unquestionably a time in the development of every young man and woman when a definitely prescribed mental diet ceases to exert the salutary influence which it has over the untrained mind, and becomes a hindrance to the display of its best energies. Then comes a time with every mind when it is best that it *should* follow its own bent. But this time rarely arrives until years of school-life have trained and developed harmoniously the mental faculties, and have given the power to discriminate between a natural predilection and a passing fancy, and it may be doubted if it comes with sufficient frequency to students of the high school to warrant the qualification of any part of the course as optional.

Having assumed, then, that our high-school course should represent equally the four classes of studies before mentioned, there remain two problems to be solved: first, that of the particular studies which should be selected in each department, and the amount of time to be devoted to each; and, second, that of the order in which the studies in each of the departments should be pursued. To solve these problems, with relation to the first, third, and fourth of our classes, is a comparatively simple matter; with the second, or that which includes the so-called sciences, the solution becomes much more difficult. There is a certain natural sequence in studies of a mathematical nature, for instance, which is not so apparent in those of a scientific nature. The consideration of this sequence in the latter case will form the subject of the present essay. To select the studies of this class most needed in a course whose period is fixed, and to apportion the given time among them, is not as difficult as it is to determine the order in which they shall be taken up. Any one who is in doubt concerning the existence of such a difficulty need only compare the courses of study of any half-dozen high schools, taken at random, or indeed the various schemes which have, during the past six or eight years, been at different times adopted for the high schools of Chicago, to be convinced that it is a question concerning which a difference of opinion is at least possible. The cause of the difficulty, although two-fold, is simple. In this connection the structure of mathematical science may be compared to an edifice made of stones piled one upon another. Each is supported by those beneath, and itself supports those above. But the structure, of which the various branches of physical and natural science are the constituent parts, is rather to be compared to an organism, in which each part has connections with, and more or less intimately depends upon, every other. The stone pile has a beginning and an end, but every part of the organism is at once beginning and end. The two-fold difficulty before mentioned arises, first, from the impossibility of arranging the various branches of physical and natural science in such an order that each shall pre-suppose only those placed before it ; and, second, from the fact that science being, as it were, a daughter of mathematics, its most fundamental branches pre-suppose a certain amount of mathematical knowledge, and regard must be had to this in planning a course of study. Of the many ways in which the half-dozen or more of scientific studies which are commonly taken up in our high schools may be arranged, or in fact are arranged in different cases, one must unquestionably be superior to all the others,—there can be but one best way. To find out this way, or, at least, to approximate to it, will be regarded by the one who knows the value of system in education as of no little importance.

Unmindful, for the present, of the second phase of our difficulty, we will first attempt to present an outline of what seems to us to be the proper order to be followed in a course of elementary scientific study as nearly as it is possible to indicate by means of anything that has a beginning and an end, that which has neither the one nor the other.

As first and most fundamental of all, then, we will place the study of Physical Science in its three branches, — Dynamics, Physics, and Chemistry, — to be prefaced, of course, by a consideration of the nature and general properties of matter. We place this first of all, because it can be taught, and taught thoroughly, with little reference to anything but mathematics, while, on the other hand, there is no other branch of science whatsoever, which can be properly taught without repeated appeals either direct or implied, to a pre-supposed knowledge of the laws of matter and energy as developed in Physical Science. The order in which its three divisions should be taken up is sufficiently apparent, for, after having obtained an idea of the general properties of matter, the study of masses and mechanical motion naturally follows, and this is, in turn, as naturally followed by a consideration of molecules and of molecular motion. The extent to which these studies should be carried is, of course, a topic whose consideration has no place here, depending as it does upon the amount of time at the disposal of the teacher and the abilities of the class. The special application of mechanical principles to machinery is a subject to be taken up at length by technical schools, but which does not belong to schools whose aim is general education. When the domain of molecular science, or of Physics proper, has been traversed, the constitution of the molecules themselves becomes the theme for study, and, supported by the physical principles already acquired, the student is ready to form an intelligent idea of Chemistry, its character and scope.

It is of extreme importance that the line between molar, molecular, and atomic science should be sharply drawn by keeping ever in view the distinction between masses, molecules, and atoms, and the forms of energy residing in each ; so that, for example, the student shall be able to understand that, while a mass of matter moving through the air has, as a whole, mechanical energy of motion, its molecules have, besides, peculiar motions in relation to each other and energies of their own, while the very atoms of which each one of those molecules is composed have in their turn motions and energies peculiar to themselves. For a single moment sight should not be lost of those principles of the correlation and conservation of energy which underlie all the laws of physical science That Dynamics should precede Physics, and that this should precede Chemistry, follows from the principle that in any study it is best for the individual to take the path by which the race has before him arrived at the conclusion which he seeks to establish for himself, and this path is necessarily from that which is obvious to that which, however obvious it may eventually become, is not so at first. Much was known of masses of matter and their properties before the conception of molecules or minute particles assumed a scientific form, and it was later still that the conception of component particles was enlarged by drawing the distinction between molecules and ultimate atoms. The study of masses reveals qualities which cannot be explained by the principles of Dynamics, and the conception of the molecule became necessary. The study of molecules again reveals qualities which cannot be explained by the laws of Physics, and the conception of the atom is required upon which to found a new science.

We thus see that the order in which we have placed these studies is the order in which they naturally present themselves to the mind ; and that to take them up in the reverse order, — that is, to place Chemistry before Physics,— would be a proceeding as unwarrantable as in Geometry to start with the theorems, and by induction determine the axioms ; or, in History, to begin with the present year and go backward. Either might be an ingenious exercise, but would hardly be the best way for a beginner to approach the study in question. Yet, if History were merely a collection of facts, having no relations beyond those of contiguity in time, it would make little difference where we were to begin or where we were to leave off. In every study the facts are subordinate, more or less, to the principles which they illustrate, and perhaps in no other are they as wholly unessential, as purely incidental, as in physical science; but the fact that every chemical text-book known to the writer either tacitly assumes a knowledge of physical principles on the part of the one who will engage in its study, or is actually prefaced by what in itself constitutes an elaborate treatise upon Physics, is, perhaps, sufficient to show that, as between Physics and Chemistry, there can be little question of precedence. With hardly an exception the very terms used familiarly in descriptive Chemistry are such as require to be defined in Physics.

What is known as Inorganic Chemistry should come first, and should include whatever of Mineralogy it is desirable to teach. In the successive study of the elements, that of carbon may be placed last, and will form an easy transition from the study of those compounds which are essentially inorganic to that of those which are found naturally only as products of the exercise of the functions of vegetable and animal organisms. The study of those compounds having been entered upon, the student should be shown the intimate connection between the organic and the inorganic world; he should be shown, by synthetic experiments, if possible, that the chemist in his laboratory can repeat the processes by which such compounds are formed in nature, and that the albumen-molecule differs from the water-molecule only in its greater complexity. He should study organic compounds by beginning with the simpler forms, and advancing to the more complex, noting carefully that with increasing complexity comes increasing instability, until having reached the very borderland between the dead and the living, he can comprehend, as well as it is possible to comprehend, the meaning of that which we call life; of that new element which is here added as an additional factor in the problems which he has to solve; of that new transformation of energy by virtue of which molecules of the highest degree of instability assume the power of collecting together the atoms of the simpler molecules about them, of rearranging those atoms, and of impressing upon them their own highly complex molecular form. He will here see the phenomena of life manifested in their simplest and most *naïve* form; he will have left the domain of Chemistry, and will stand in the gateway to that of Biology, — the science of life. He will see that just as the simpler molecules which he has heretofore been studying have had inherent in themselves a tendency to arrangement in the form of crystals, so these more complex molecules which now demand his attention have a tendency to arrangement in the form of cells, which, however, unlike the crystals, have the power of assimilating from the surrounding medium the materials needed to build other cells of the same kind, and thus the power of reproducing themselves to an indefinite extent.

Having briefly studied those forms which are completely homogeneous, and whose parts differ only in function as they happen to be on the inside or the outside of the cell, he will advance to those which present differentiation of structure and consequently of function, and here he will see in its simplest form that system of division of labor which has caused all living beings to be known as organized bodies. Having noted the point at which this system has its first rude beginnings, the work before him is to follow it out in its harmonious development by the successive study of higher and higher forms, observing that the very term " higher form " is synonymous with increased division of labor and the consequently greater differentiation of function, and that such increased division of labor and differentiation of function is all that distinguishes the highest organism from the lowest.

Before going very far up in the scale, however, his attention will be called to the fact that the various forms of life which he is study ing tend to fall into two distinct classes, which, as he ascends farther, diverge more and more, until at last, whatever difficulty he may at first have experienced in assigning a given organism to the proper class, has entirely disappeared, and the separation of the plant from the animal is complete. He will note that the general, although by no means the universal, characteristics of the one class are fixedness of position, a cell-wall composed of cellulose, assimilation of carbon and rejection of oxygen ; as opposed to freedom of motion, a cell-wall containing nitrogen, and the assimilation of oxygen and rejection of carbon of the other. Having then clearly in view the distinction between the two great classes of organized existences, he will see that the science of Biology has two grand divisions, to the first of which, Phytology or Botany, he is about to proceed, leaving the second, Zoölogy, to be taken up at a subsequent period. Botany, as well as the Zoölogy which follows it, should be studied in three aspects, the morphological, the physiological, and the geographical. To the latter, or geographical aspect, it is, perhaps, not advisable to devote much time or attention, the more general features of the distribution of plants and animals according to climate, altitude, etc., being sufficient. An acquaintance in detail with the geographical distribution of living forms is doubtless a valuable thing to possess if one has room for it, but it belongs to that class of knowledge which is valuable only as knowledge, which burdens the memory while adding nothing of the mental powers, and which, in the opinion of the writer, it is desirable to avoid as far as possible in a course of high-school instruction. On the other hand, the study of the morphological part of Botany and Zoölogy appeals directly to those faculties which most need cultivation, the faculties of observation, and this in a peculiar way and one altogether different from that in which they are called upon by experimental Physics and Chemistry. The mathematical exactness of the observations called for by physical science becomes here less prominent, while there is given occasion for a freer and wider exercise of the judgment. The study of classification, and the principles upon which it is based, should then be paramount in the consideration of these subjects as the special contribution that it makes to the mental powers is peculiar, and one whose place could be supplied by the study of hardly any others. At the same time that the observant powers and the judgment are thus receiving this eminently salutary training from the study of the forms of the parts of organisms, the study of their functions is bringing to the attention of the student a constant succession of novel applications of well-known physical and chemical principles, thus fixing them more firmly upon the mind, and, by presenting them in new aspects, widening his previously somewhat narrow conceptions of them.

Directly following these studies, or, perhaps, parallel with them, should come Geology, or, at least, that part of it which considers the fossil remains of organized bodies, the strictly mineral part of it being more properly considered as a branch of Inorganic Chemistry. The study of fossil plants and animals might indeed be pursued at the same time with the study of living forms, each organism being referred to its proper place in the scale of life; and there would undoubtedly be gained by this a more comprehensive conception of the serial continuity of living forms, and of the necessarily artificial character of all schemes of classification. But the fact that the fauna and flora of past epochs serve to fill up blank spaces and supply missing links in the scheme of living forms can just as well be pointed out if they are studied by themselves; and while their study in connection with living forms would serve to develope no new principles, but merely to emphasize principles which are made sufficiently evident without their testimony; by making them the object of separate study, there is provided a means of inquiring more closely than would otherwise be convenient into the physical characteristic of the various geologic epochs, and the element of time, which is entirely ignored in the study of Botany and Zoölogy, is given its true significance. The intellectual advantages of thus making a special study of the sequence in the development of organic forms, imperfect as the materials are, and broken as the sequence of necessity is, are much greater than those to be derived, and that only at the sacrifice of these, from a general view of all known forms properly arranged, but without regard to sequence in point of time. The principle of development is to biological science what the principle of the correlation and conservation of energy is to physical science,—the one central fact, to which everything, more or less directly, has reference, and like the principle of the correlation and conservation of energy, it is something to be seen by each one for himself if the facts are properly arranged for presentation. Having thus become acquainted with the forms of life, both past and present, and with the natural methods of classification, and having obtained a general idea of the organs of living things in their physiological aspect, the student will do well to devote a few months to the special and detailed study of the physiology of that most complicated of all organisms, known to naturalists as *Homo sapiens.*

The study of Human Physiology may be considered in two ways, one of which by no means excludes the other. Considered in one way it is a collection of certain facts in the structure and functions of the human body, which it is in the highest degree important, — nay, essential, — that every one should possess. The knowledge of these facts is frequently provided for by oral or other instruction given in the grades preceding those of the high school. This is an exceedingly wise provision, and does not preclude the pursuance of the study of physiology in an altogether different way when the mind of the student is sufficiently matured. Considered in this other way, it is a branch of knowledge whose successful pursuit requires the greatest possible familiarity with physical and chemical principles and with those of biological science, together with an acquaintance as intimate as possible with the art of experiment, its methods and resources, and added to all this a degree of mental development fitting the student to grapple with problems of a much more complicated nature than any heretofore laying claim to his attention. Such is the general character of the only preparation at all adequate to the pursuit of any other than a very superficial acquaintance with the details of the vital processes of man. This being the case, and the main intellectual advantages of the study of Human Physiology being such as are only available to the mind already well trained, there is but one place that it can suitably occupy in the scheme of scientific studies,—the last and highest place in the list. Any attempt to place it lower than this will so detract from its efficiency as an aid to mental development as to leave little reason for giving it any consideration at all. It is truly styled by Schopenhauer as the summit of all the sciences. Its value is not, any more than that of any other science, in its being a collection of facts. It is a collection of principles, each of which is an appeal to the highest of the mental powers. It must be placed at such a stage that the development of those faculties to which it appeals shall not be wholly inadequate to the demands made upon them.

Such a course as we have here outlined, comprising Dynamics, Physics, Chemistry, Botany, Zoölogy, Geology, and Human Physiology, ought to extend throughout the length of a high-school course of four years duration ; nor, in the opinion of the writer, can even partial justice be done it in less time, and it would be better, whenever the time is limited to less than that period, to attempt only a part of it. All attempts to provide for the needs of the large number of those who never complete their high-school education, by the partial consideration of topics during the first part of the course, leaving the rest to be taken up at some future time, or by the erection of special shorter courses, crowded with studies, to no one of which sufficient time is given to admit even of a conception of its scope and methods, are cases of misdirected energy. The student who can only spend two years within the walls of the high school will be better off when he leaves it if he has started out, just as he would have done, with the prospect of an indefinitely extended school education before him, than he will be if his instruction has been especially shaped with reference to the short time which he can devote to receiving it, and if at the end, as is so frequently the case, he finds himself in the possession of a strange medley of facts and principles drawn from half-a-dozen sciences, but without any orderly arrangement. To the one who has thus started right whole departments of knowledge may be sealed books, but he will have a fair conception of physical science at least; and the systematic, and, at any rate, something more than superficial study of this one subject will give him a mental training that will help him amazingly in the study of any other, whether in school or out of it. The interests of those who are unable to complete the public-school course of study are entitled to the most careful consideration, as, in numbers, they so greatly outrank those who persevere to the end, and were it a question to be decided by numerical strength alone, their interests should be paramount; but it is the object of every public-school system to provide for all who will avail themselves of it, an education which, within certain well-defined limits, is complete; and, even in the separate divisions of this system,—as, for instance, in the high-school department,—there is a sort of secondary completeness to be aimed at which is equally well defined. If this, then, is confessedly the object of the school system as a whole, and of each of its departments as well, it should never be lost sight of, and especial care should be taken not to lose sight of it in considering the interests of the large majority with regard to which the object is not attained. Happily, however, this conflict of interests is more apparent than real; there is a best way of building the educational edifice, and of constructing every part of it, from the foundation up, and reflection cannot fail to bring the conviction, that, however desirable a tall and imposing structure may be, yet a well-laid foundation and a substantially built first story, even if the building go no higher, are better than a structure as high as the tower of Babel, hastily and imperfectly built and incapable of resisting the storms which it is sure to encounter. The former is at all events greatly begun, and ever presents a firm base upon which to build further, so that if the work be suspended for years it may at any time be resumed, and the edifice gradually rise to completion, while the latter can, it is true, be patched up here and there and gradually strengthened; but the work at best must be done clumsily, and in many cases it will be necessary to pull the building down, strengthen the foundation, and begin over again. To somewhat stretch the metaphor, the confusion of tongues which rewarded the builders of the tower of Babel may be said to symbolize the confusion of ideas necessarily attendant upon the education which attempts to crowd into one year the subjects to which two years are no more than adequate.

Having thus discussed the question of the order to be followed in the pursuit of scientific studies in its general outlines, there still remains much of detail; as, for example, the order of topics in each particular study, for most of our text-books are written not with reference to any general system, but each with reference to a system of its own. Instruction in these studies in accordance with the general scheme here proposed would necessitate a re-arrangement of topics in many existing text-books. As it is not within the scope of this essay to enter into such detailed consideration of the subject, we will direct our attention to some secondary questions which naturally arise in this connection. Many high-school courses embrace a study which is called Physical Geography, and it will naturally be asked what we propose to do with it. We suspect that the fact that this Physical Geography has any separate place whatsoever in these courses arises from defective text-books in the various branches of science; for it is nothing but a collection of scientific fragments drawn from many sources, which fragments, put together, show little kinship and form a book of so miscellaneous a character that there is often question of where it should be placed in the course of study. This will be seen by observing the position which it occupies in the courses of a few different schools taken at random, or in the fact that, after enjoying for many years a position in the first year of the course of study in the high school of Chicago, it was suddenly and unceremoniously transferred to the fourth or last year, where it remained for a while, when it was restored to its former humble position.

The only value of such a book is for use as a collection of valuable information in the lower schools. Most of the contents are facts concerning natural phenomena which may be imparted to scholars of the lower grades merely as facts without attempting an explanation of the principles which underlie them. If carefully dissected, however, its various parts will be found to fit into places which are either vacant or imperfectly filled in other text-books; that part of it which relates to the actual physical conformation of the earth should be studied in connection with the political geography of the grammar grades, thus making it something more than a mere enumeration of unsystematized facts, and lending to the study of Geography something of the interest that can never attach to anything which exercises the memory without stimulating reflection; that part of it which relates to winds, tides, etc., as well as the meteorological part, belongs to the study of Physics, and only in this connection can such phenomena be satisfactorily considered; the enumeration of the rocks and the statement of their composition belongs to Chemistry, and the detailed account of those natural phenomena which result in permanently changing the physical features of the earth belongs either to physical science or to the special study of Geology, which, as far as its relation to such changes is concerned, is merely the study of the application of physical principles to the special conditions offered by the earth's crust; that part which relates to plant and animal life upon the earth is simply distributive Botany and Zoölogy, and to be considered as a part of those studies.

Astronomy may, as before suggested, be considered as a mathematical study, and taken up as the last topic considered under that head; it will then come toward the latter end of the course, at a period when the knowledge of physical science which it requires will have been secured. The study of Psychology pre-supposes some degree of intellectual maturity, and is pursued to the more advantage the wider the field of previous study, if introduced at all as a separate study into the course, a measure the advisability of which is questionable; it should occur at the latter end; aside from this, in the study of Physiology, the consideration of the functional activity of the nervous structures will involve the intelligent use and accurate definition of the most important psychological terms.

There remains one other question for consideration. The first study in our outlined course is Physics, including Dynamics, —the study of this requires an acquaintance with algebraic and geometrical principles; but in most high schools, Algebra occupies the first year and Geometry the second. An attempt to teach Physics at any other than an extremely slow rate during the first year must be a failure, owing to the lack of the mathematical knowledge required for the comprehension of some of its principles; if the commencement of the scientific part of the course be deferred until the second year, it will stretch beyond the limits of the entire course, and the student will have nothing of a scientific nature for his first year. If Algebra were made a grammar-school study, and the mathematical part of the high-school course thus made to begin with Geometry, the difficulty would be done away with; but that, perhaps, is a more utopian suggestion than any other in this essay, and as an alternative we will only say that if the natural order of the sciences *must* be broken, the least harm will perhaps be done by taking up as much as possible of Botany and Zoölogy and of the methods of classification for the first year, and commencing the second year with Physics; from that going on in the order laid down. It has been the experience of the writer that the studies here suggested for the first year, if properly pursued, are to the young mind of greater service than any others in calling forth and developing the most valuable of the mental faculties, notably the faculty of close observation; and perhaps the training received from them thus early will, in its effects, as subsequently seen throughout the course, largely compensate for the confusion into which the natural order of scientific studies is thrown by this disarrangement.

Time was when the higher education consisted mainly of the Classics and Mathematics; the enormous stimulus given to Natural Science during the last few years has caused a great outcry against the educational methods fossilized by the sanction of centuries; the complaint runs: Our students study words and not things. A new *régime* should be inaugurated, in which the study of Science shall occupy the first place, bringing us, as it does, in contact with what is actually around us. The complaint is just, but the remedy would be worse than the evil it seeks to cure. Science itself may be made a mere study of words, and bring about mental stagnation as effectually as the most orthodox of Latin grammars. There is an inborn instinct that impels most people to play the part of the phonograph. The object of education is to subdue this instinct, and to make independent thought the normal product of mental activity. Now that the claims of Science upon our educational systems are fairly recognized,—or, at least, are in the way of speedily becoming so,—it is well to form a just estimate of its value, avoiding on the one hand the position, now well nigh untenable, of those who not long since looked scornfully down upon the upstart intruder, and continued to do just what their ancestors had done before them ; and on the other, the position of those who claim for Science all the allegiance hitherto bestowed upon Mathematics and the Classics, and whose own education, as in the case of one of their chief spokesmen, Mr. Spencer, is so unfortunately one-sided as to excuse their bias, but to render them incompetent to judge fairly of the merits of that which they condemn.

The obviously beneficial results which the introduction of Science into general education has already produced are to be attributed to several causes. It has widened the mental horizon of the student, and this alone is of no small consequence. It has appealed powerfully to mental faculties over which other studies are powerless. It has, by familiarizing its own methods, imparted a more liberal spirit to training in other departments. But it has yet something else to do. It has stood more aloof from its companions than even the novelty of its subject-matter and methods would warrant. They have learned much from it, but it in turn has much to learn from them. It has occupied itself too much with the consideration of facts to the exclusion of the principles with reference to which alone the facts have any educational value. Its usefulness in education has been diminished by its laying itself open to the too just charge of empiricism. All this is what might have been expected in its earlier years, but the time is surely come when we may expect something more of it. We have, in the course of this essay, repeatedly expressed the thought that education, and especially the higher education, aims at something more than taxing the memory ; to overburden it with facts is to make it necessary in after-life to continually crowd out those which are useless in order to make room for new ones which have to be accommodated. We use the word "facts" in the sense of details, and as distinguished from principles, which are, of course, in reality only facts of a higher and more generalized kind. Education is largely the process of arriving at these generalized facts by inductive methods; only as many of the details are necessary as may be required by the student in order that he may perform the induction for himself; the rest are in their proper place in the dictionary and the encyclopædia, not in the mind of the student.

It is surely an enormous waste of energy to store the memory with a mass of details, drawn from all departments of knowledge, in the hope that some share of them will be those needed in after-life,—the memory itself revolts and rejects them all without discrimination. The particular set of facts required by the individual, in his own peculiar walk in life, will be obtained easily enough when the time comes, if he bring to their acquisition the power of rightly interpreting what he sees either in the book of the library or the book of nature. Such power is the result of education in the sense in which we have defined it, and the scientific part of education, if pursued under the stimulus of the motive here urged,—that of the acquisition of principles, each of which stands for many detailed facts, rather than of the facts themselves,—is able to contribute to this power no less largely than any other part; and in order to make it most efficient as an aid to mental development, its study must be as rigorously systematized as, for example, the study of the classics has been by the labors of successive generations. The example is before us; it is always easier to follow an example than to set one. To place the different branches of Science in their proper relation to one another, and make of the disconnected fragments an organic whole, is one of the steps necessary to be taken. To attempt this has been the object of the present essay.

HISTORIC ILLUSTRATIONS OF SUPERIOR TEACHING.

BY J. A. REINHART, PH. D.

II.

We resume the consideration of certain instances of superior teaching. We shall aim to determine the psychologic and pedagogic principles upon which the excellence of the teaching rests; and for our second illustration we direct the reader's attention to Chapter X. of the first volume of Conybeare and Howson's *Life of St. Paul*, It may, we think, be made apparent that this remarkable chapter of a justly famous work is a striking illustration of excellent teaching in the subject-matter of History. This complex thing we call teaching,— this combination of selection of subject-matter, definition and restriction of field of study; direction of thought, moral influence, determination of will-power, illustration and exemplification, giving of information and denial of information, giving of help and denial of help, allowance of freedom and insistance upon recognition of authority,—this complex art, we repeat, is not the exclusive province of the class-instructor: it is often the field, and, in a strictly scientific sense, also of the *writer*. The aim, method, manner, and general spirit of the writer, who has a definite didactic object, may have for the class-instructor lessons susceptible of varied application. For teachers must, as it now seems, continue to count among their most determining and most efficacious auxiliaries, *books*,—text-books which shall speak to the student when the teacher is silent, speak at length, and with wealth of illustration where he has but time to indicate, and be the sources of information and inspiration, more comprehensive and influential than even his living art and voice. Happy is that teacher whose aid and auxiliaries of this kind are as comprehensive and as truly pedagogic, natural, methodical, and inspiring in their spirit and method, as his own judicious, thoughtful, and active art. For the implements of the teacher's toil, his text-books,— the manuals of study, the guides to established usage in language, the hand-books of investigation in mathematics, the introductions to the various sciences,—should themselves be the exponents of a method, sanctioned by the principles of the science of mind and by the laws of the formation of character.

Apropos of our proposed analysis of this chapter of Conybeare and

Howson, the noble words of Milton are recalled: "Books are not absolutely dead things; . . . they do preserve, as in a vial, the purest efficacy and extraction of that living intellect that produced them"

The chapter opens with an allusion to Apollonius of Tyana, a cotemporary of St. Paul's, a traveler through the same countries, and, like him, a visitor to Athens. An extract from the biography of Apollonius heads the chapter, reciting the magician's entrance into Athens, his interviews with the philosophers, the devotion of the Athenians to religious observances, the discourse concerning the worship of the deity, and the altars to *the Unknown Gods*. The like experiences of St. Paul and his relation to these Athenians and to their city,—"mother of arts and eloquence,"—are the subjects to be taught, to be represented to the consciousness of the reader. We have, in the first place, a vivid account of the voyage of St. Paul as he flees from Berœa to Athens. In imagination the student accompanies the Apostle. The heights of Macedonia and snowy Olympus itself disappear as the vessel gradually approaches nearer and nearer to the center of all the interest of classical Greece. Land and water become eloquent, every rock is a monument, every current is animated with some memory of the past. Mt. Athos, Thermopylæ, Marathon appear; the southern point of Attica is doubled, the sunlight flashes from the armor of Minerva Promachus of the Acropolis, and finally the vessel anchors in the harbor of the Piræus. Then follows a description of Attica and of Athens, with maps, plans, and illustrations.

The topography, the geography of the place is developed. The ground, the sky, the atmosphere, climate, clouds, and mountains reveal themselves to us, as they did to St. Paul, to Apollonius, to Pausanias, to Cicero, to every living man of that age. Next we have the scene which met the eyes of St. Paul in the harbor of Piræus,—the shipping, the indentations of the coast, the landing-places, the theaters on the shore, the temples at the water's edge, and the perfect buildings shining from the Acropolis. Then follows the development of what met St. Paul's eyes when he entered Athens and "disputed in the market daily with them that met with him." The reader beholds the whole scene *re-created*, existent and insistent before St. Paul; the public buildings, the statues, the temples,—"the glorious public life of Athens,"—the memorials of acted history; the gods (more numerous than men), altars, theaters, Mars Hill and the Agora, the Acropolis and the Parthenon,—all are represented to him, mirrored to his clear and distinct consciousness. But St. Paul must be associated not only with the public life and the religion of Athens, but with the philosophy of Greece. And the reader contemplates the site of the Lyceum, the Academy, the "Painted Porch," and the Garden, — on the principle that the appearance and spirit of Athens must be *realized*, — held as an actuality before the mind of the learner,—who would understand "St. Paul on Mars Hill." The Athenian character is restored for us, the peculiar state of the morals, the religion and the philosophy of the time, the impressions of Pausanias and Cicero, visitors to Athens (the former before and the latter after St. Paul), are recorded; the philosophy of Greece, its originators, its teachers, the various schools, the results of their teaching on the Athenian character, the contrasts and oppositions of this philosophy and this character to the Gospel to be proclaimed by St. Paul,—all these are contemplated by the reader. Finally, the chief of the *dramatis personæ*, St. Paul himself, the spirit of his mind, his impressions of this Athenian art, religion, politics, architectural splendor,— this pomp of acted history, this wealth of religious and patriotic memorial,—and his unrivaled tact and eloquence in his address from the Areophagus, is vividly represented to the contemplative reader.

COMMENTARY.

Some years ago the writer was listening to a sermon based upon St. Paul's speech on Mars Hill. His thoughts reverted immediately to the historical passage which he has selected as an example of superior teaching. He then coined a phrase descriptive of the method of the learned authors, and, in fact, constituting a generalization of their whole didactic procedure. The method which the authors pursue, said he to himself, is the *Reconstruction of the Environment;* they would re-create in the consciousness of the reader St. Paul's whole environment, would make to live again in the reader's pictorial imagination, the epoch, the time, the place, surroundings and conditions, all the detail of modifying circumstance, and in the midst of this reconstructed environment, they would allow St. Paul's doings to tell their own significant story. Let us consider what is involved in this as a pedagogical principle of historical instruction.

1. The principle of the *reconstruction of the environment* recognizes that no fact in life or history is isolated or without dependencies;[1] that every event must be studied in its relations, as part of a complex whole, to which the student shall apply his faculty of com-

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[1] "All the diverse parts of this civilization, so large and so complex, were united by common dependencies."—H. TAINE, *Historical and Critical Essays*

prehension. The reconstruction of the environment is, on the part of the teacher, a picturing-out process, a development into a comprehensive totality in the consciousness of the learner of the original elements of the thing he wishes apprehended. The facts to be presented are brought forward as a realistic whole. Details are developed to perfect the conception of the whole. To quote the highest of German authorities,[1] "If the investigator progresses from vivid details to a condensation of the contents of ideas, the public-school teacher *must return from the idea to the separate phenomena* in order to make them clear and impressive; . . . every means must therefore be employed to bring stirring events *vividly before our own eyes.*" Any historical event,—*i. e.*, Washington's resigning his commission, or Luther's apppearance at the Diet of Worms,—cannot be comprehended or known as an isolation; the related parts must be shown and *in co-existence of relation.* Any series of teaching acts, such as Conybeare and Howson's Chapter X., or the two events just mentioned, must present "definite groups of historical facts *in their interior connection.*"[2] To secure the perception of this *interior connection,* the clear and distinct consciousness of a group of facts, the teacher must place the learner in the "midst of the spirit of humanity," in the midst of the recreated environment of these facts.

2. But what psychological principle makes this method of historical instruction either desirable or necessary? Let us inquire. All knowledge is through experience, and that knowledge is most perfect which is the result of direct experience, or is, as the Germans say, *intuitional,—i. e.*, gained in the direct presence of the object. "All knowledge, it may be safely said, must be ultimately founded on experience, which is a general name for the various feelings impressed upon the mind at any period of its existence."[3] Further, "the faculty of intuition is the basis of all intellectual culture. . . . All instruction in elementary schools must rest upon real intuition[4] But very evidently, in historical instruction, the student cannot be made to have direct experience; no *immediate* knowledge is possible; intuitional instruction is not available. But the intuitional instruction may be simulated by the revival and reconstruction of a past

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[1] Diesterweg: *Instruction in History, in Hall's Methods of Teaching History;* Boston. This is the most valuable of American publications on Methods. It is to be regretted, however, that Dr. Hall did not annotate Diesterweg; that he did not address himself in this particular instance to that work, in the like of which, Taine says, every thinking person is now laboring,—namely, *the interpretation of the German mind.* For it will not do merely to *translate* the German pedagogical mind; to the mass, perhaps, it is little less intelligible in its English dress than in the original; it needs to be *interpreted to us.*

[2] Abbenrode: *Catechism on Methods of Instruction, German Pedagogy*; p. 491.

[3] Jevons: *Lessons in Logic.* [4] Desterweg: *German Pedagogy*; p. 380.

group of facts in their entirety, in their connections and relations; by their interpretation the imagination may replace the faculty of intuition, and herein is revealed the psychologic principle referred to. The ideal state of knowledge is the intuitional, the being present, as Ulysses, "Far on the ringing plains of windy Troy," the being as Ulysses, "a part of all that I have met." But this, in historical instruction, is impossible. "Our great care should be to supply as much as possible the want of present, personal, direct, and sensible observation which we can no longer practice; for it is our only means of knowing men. Let us make the past present; in order to judge of a thing it must be before us; there is no experience in respect of what is absent."[1] Historical instruction is, therefore, efficacious just in proportion as it simulates the living, vivid impression of intuitive knowledge, and this tendency toward the characteristics of intuitional instruction is possible through the faculty of representative imagination.

3. All knowledge is founded on experience. The fundamental conceptions of every science, of every branch of learning, are reducible to the impressions of direct experience,—*i. e.*, to *intuitions*. "More important than all means of instruction is the apprehending and accomplishing,—a view which vindicates itself ever more and more that *all instruction, without exception, must be based on intuition*."[2] To illustrate: In teaching arithmetic, from the beginning we are wholly dependent for success on the perfection of the child's first direct experiences, his intuitions of number and of the relations of number. And, in geometry, with what scrupulous care must the fundamental intuitions be realized! The instruction here, at this early stage, is of the most extreme importance; the intuitions must be realized in the most vivid consciousness, or henceforth the student's progress is as in a dream. The question before us is, What are the corresponding intuitions which the clear understanding of the affairs of history necessitate? "How can he who has never seen peoples, possess a living image of them and of their life? How can he who has no experience understand history?"[3] The intuitions which fit a student to understand history begin with his impressions of social life outside the family. The phenomena of school-life, the visible body of individuals there associated (more or less under the influence of law), and showing the action of rewards and punishments, and the results of the master's authority, continue these impressions. Later in life the phenomena of township government, of church and other public

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[1] Taine: *History of English Literature*; vol. i. p. 3.

[2] *Diesterweg's Teacher's Guide, German Pedagogy*; p. 384. [3] *Ibid.*

assemblies, and also the operations (so far as they come under the immediate knowledge of the student) of the State and National Governments, furnish a store of intellectual experiences which should be systematically extended, deepened, and "brought into realm of a clear consciousness."

The necessity of basing all historical instruction on direct intuition is fully recognized by the authors of our typical act of teaching. Consider what intuitions, what previous direct experience, are necessary to realize to one's self the "gloom in the dells of Hymettus," the "temple-crowned Acropolis," and "the Agora full of the memorials of actual history," — "the center of a glorious public life when the orators and statesmen, the poets and artists, found there all the incentives of their noblest enthusiasm."[2] The authors liken the Agora to the beautiful squares of Verona or Florence, recognizing the necessity of building knowledge on previous intuition, for "the endeavor of history-teaching must be to bring the events of the past into animated contact with the impressions of the present."[3]

4. Commenting still further upon this illustration of superior teaching, we remark that the true method of teaching in history is *analytic*, — one which presents the *facts* for interpretation and comprehension, and not opinions and theories to be synthetically substantiated. M. Taine, alluding to Carlyle, in his *Life of Cromwell*, says, "This history, Carlyle's masterpiece, is but a collection of letters and speeches, commented on and united by a continuous narrative. The impression which they leave is extraordinary. . . . At last, we are face to face with Cromwell. . . . Would that all history were like this."[4] The same writer, referring to the reconstruction of a past age and its interpretation, remarks, "This precise and proved interpretation of past sensations has given to history in our days a second birth."[5] The emphasis, from an educational point of view, to be laid on the analysis and interpretation of historic phenomena rather than on the comprehension of the individual views of the historian, may be illustrated by Hegel's distinction between an *original* and a *reflective treatment* of history: "In the former the mind of the author (or teacher) becomes identified with the spirit of the subject and the age which he describes; of this kind are *Herodotus*, *Thucydides*, *Xenophon*, and *Cæsar's Commentaries*, —all simple chronicles and memoirs, and all contemporaneous history, in fact. In the latter the mind of the author is far in advance of the age

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[1] Diesterweg, in *Barnard's German Pedagogy*; p. 382.

[2] Conybeare and Howson's *St. Paul*; I. p. 353.

[3] *Methods of Teaching and Studying History.*

[4] *History of English Literature*; vol. ii. p. 470. [5] *Ibid*; i. p.

which he describes."[1] Compare with this the remark that the historical "issue and its consequences must not be given in the *weakened reflection* that results to the narrator after centuries, but in that which must have existed for those directly concerned."[2] With reference to the condensation of history and the consequent embarrassment to the teacher, we may compare the following: "As soon as the matter has been so closely condensed that we can no longer follow the inner movement of forces, and no longer understand the course of development from causes, then all experience ceases";[3] then the learner's efforts are confined to verbal perception, verbal memorizing.

It may further be stated, as a principle of historical teaching, that the method of investigation is far preferable to that which has been called the Method of Instruction.[4] "I am convinced that the method of teaching (or learning) which approaches most nearly to the method of investigation is incomparably the best, since not content with serving up a few barren and lifeless truths, it leads to the stock on which they grow; it tends to set the reader (a learner) himself on the track of invention, and to direct him into those paths in which the author has made his own discoveries."[5] Adapting the principle of Diesterweg, we may say that the method of historical instruction is identical with that of practical life; it demands the establishment of actual conditions as its starting-point, on which the intellectual labor of the learner shall be based.[6] Relative to the method of investigation in the teaching of history we may quote Hamilton: "It is manifest that the knowledge we acquire through our personal experience is far superior in degree to that which we obtain through the experience of other men."[7] Says Gladstone, "Inquiry is a road to truth, and authority is a road to truth. . . . Inquiry is the more normal, the more excellent way."[8]

The excellence of the method of investigation, as applied to teaching, may be referred to the principle that a method is valuable in proportion as it tends to exercise a greater number of the nobler faculties in a higher degree;[9] to the principle that the "intellect is perfected, not by knowledge, but by activity";[10] and finally, to the principle that the mind, in elaborating its knowledge, naturally proceeds by the method of analysis.[11]

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[1] *Methods of Teaching History*; p. 59. [2] *Ibid*; p. 69. [3] *Ibid*; p. 144.

[4] Vide *Lessons in Logic*, Jevons; p. 202.

[5] Burke: *Essay on the Sublime*; quoted by Payne: *Science of Education*; p. 230.

[6] *Methods of Teaching History*; p. 115. [7] *Logic*; p. 442.

[8] *On the Limits of Authority.* [9] Hamilton: *Discussions.*

[10] Aristotle: quoted in *Metaphysics*, Hamilton; p. 8. [11] Hamilton: *Metaph.*; p. 498.

THE ORIGIN OF THE FIRST GERMAN UNIVERSITIES.

[Continued from the May June No.]

BY G. G. BUSH, PH.D.

OFFICERS OF THE UNIVERSITY.— *Chancellor* (*Cancellarius*). — The title of Chancellor is ecclesiastic, and had its origin in Paris. As the university sprang in part from the cathedral school, and the chancellor of the cathedral became its nominal head, the title[1] was transferred to this new dignity. But the authority exercised by the chancellors in Germany depended very largely upon the confidence reposed in them by the founders of the universities. Archbishop Arnestus, as chancellor at Prague, was vested with extraordinary powers, such as were unknown to Paris under the regulations of Gregory IX., or even to Prague in later times. In general the chancellor, besides having power to enact laws, enjoyed the right to create doctors and masters of arts. He was present at the examinations, and could conduct the same; he gave permission to deliver lectures, and in all spiritual matters had unlimited jurisdiction. During the fourteenth century this dignity (except in Paris, where it was always subordinate) was conferred upon the archbishop, and, according to the oldest Vienna statutes, the decision in criminal cases, after being adjudged by the rector, belonged in the last instance to the chancellor, and if the criminal was found guilty, the penalty of death according to the canon law could be pronounced before his court. When, however, before the close of the first half-century of university life in Germany, pope and ruler combined to free the universities from ecclesiastical jurisdiction, the dignity and influence of the chancellor were thereby diminished.

About this time a struggle for autonomy began in many of the universities, which was aided by their constitutions, since, in accordance with the powers conferred by them, upon the request of the faculties, special conservators of academic rights could be appointed by the pope. The particular object sought was to limit as much as possible the power of the chancellor, and increase in like ratio the dignity and importance of the rector.

Rector. — The chief officer of the university was the rector. He was at the head of the administration, the instruction, and the discipline, and associated with him was the academical senate. Until the abrogation of the chancellorship his authority, however, was somewhat limited, but afterward it became much greater in Germany than it had ever been in Italy and France. After a new university had been divided into nations and faculties, the first business was to choose a rector, but the method employed in making the selection varied greatly in different universities. In Vienna, following the example of Paris, the electors were the four procurators of the nations, and the choice of rector was confined to the philosophical faculty, but after 1384 a member of any faculty was eligible to election. The same was true at Heidelberg, where the first rector, Marsilius of Inghen, was chosen from the philosophical, while only seven years later the choice fell upon a member of the theological faculty. But in Prague and Erfurt the elective machinery was nearly as complicated as that used in Venice when choosing the Doge. On the days called "Georgi" and "Galli," — that is, twice a year, — each of the four nations chose an elector. These electors chose seven others, and then the seven last-named chose a new electoral committee of five, by whom the choice of a rector was made. The last three elections must take place within an hour, under heavy penalties. In Erfurt professors in all the faculties were eligible to this office, and the method of selection was as follows: A committee of eleven was first elected and then a student was added; from this number a smaller committee of three was chosen by lot. The youngest of the three, — possibly a student, — then proposed three candidates, and one of these was declared rector. During the early years of the Prague University, and in Vienna until the seventeenth century, the rector was chosen twice a year; but in all the other universities the elections took place only once a year, — a custom which is still retained.

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[1] In Bologna the head of the theological faculty was strangely called *Cancellariatus.*

The qualifications for this office were similar to those required in the University of Bologna, which have been named, except that it was not necessary for the candidate to be a member of the faculty of law. Within eight days after election, — usually on Sunday or Friday, — the new rector called an assembly of the university, took the oath of office, and received the seal and statute-book from his predecessor who then became *rector antiquus*. In the oath he pledged himself, among other things, to administer the revenues conscientiously, and enrich the annals of the faculty and university (*annales libri facultatis et universitatis*) with memorable events. It was his duty also to preside at the weekly or semi-weekly sessions of the faculties, and hold once a year a full assembly[1] of the university to "bring the laws into remembrance." In the discussions which arose in these assemblies the students were permitted to take part. The office of rector was everywhere very highly esteemed, as it conferred a rank higher than that of the clergy, and but a little below that of prince. "Illustrious master in the seven arts and upper schoolmaster in the great school of Vienna" was the title by which the rector was known in the earliest times at Vienna. At Prague the title varied between *vir nobilis*, *reverendus*, *venerabilis*, and *magnificus;* but at the beginning of the fifteenth century the latter title seems to have been the one most commonly employed.

The influence of the rectors was greatly increased by the jurisdiction which they held over all members of the university, as well as over writers, correctors, bookbinders, apothecaries, and others who were in its employ. Thus the university was, to a certain extent, a state within a state, the rector[2] having absolute power in civil and criminal matters, from whose decision there seems to have been no appeal save to the king or ruler, or, in special cases, to the authorities of the church. The salary of the rector was never great. What he received came mostly from matriculation-fees, and from the fines which were customary from the fourteenth to the seventeenth century, and which fell in part to him.

Dean. — The division into faculties, like the division into nations, was an outgrowth of the spirit of corporation. The officer at the head of every faculty was the dean, and this position was much the same in all the universities of the fourteenth century; that is, the office, while in most respects independent, was inferior in dignity to the rectorship. The dean was chosen by the regular professors, called *actu regentes*,[3] semi-annually at Prague and Vienna, and annually at the other universities. He bound himself by oath to preserve the decrees of the faculty, keep a record of important events, names of newly-created bachelors of arts, licentiates, and masters of arts, and issue no decisions bearing the seal of the faculty without the consent of the four professors (*consiliarii*) who formed the faculty council. It was his duty to see that every professor and licentiate held the disputations in order, and began and finished the courses of lectures according to the published announcement. He had authority to call the faculty together at such times as he thought necessary, but was required to do so at least four times a year, when, in the presence of a full assembly (*plenum concilium facultatis*), the statutes were read, and penalties decreed against any who had violated them or divulged the transactions of the council. All the professors, — *actu regentes* or *non regentes*, or, as we might perhaps say resident and non-resident, though the latter had no part in his election, — were obliged to render him obedience. During the examination for an academical degree he sat as president of the examining committee, but first gave oath to the rector that he would conduct the same with the strictest impartiality.

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[1] In the assembly of the university the rector had but a single vote, and could not make a decision or carry it into execution without the approval of the four deans and procurators, if there were such.

[2] In the early history of Vienna, however, as already stated, the final decision belonged to the chancellor.

[3] Those of the ordinary professors who were at the time delivering lectures.

In addition to the four councillors of the dean, there were in Prague and Vienna as many more appointed by the nations to act as advisers and assistants in issuing certificates of graduation, in imposing fines, and in ordering the observance of solemn ceremonies. But, as already stated, the power, possessed by the nations, was only temporary. By the close of the fourteenth century, the faculties with their deans formed an integral and legally protected part of the university corporate body, and exercised therein a controlling influence. To avoid, if possible, mutual enmities and rivalries, it was sought by the deans and councillors to bring the members of the different faculties into a closer relationship. Difficulties were also prevented by the wise arrangement that each faculty should elect its own professors, but such election was not valid until approved by the university council, and confirmed by the civil ruler or city authorities. In the early history of the universities a gradual enlargement of the powers conferred upon the faculties is everywhere noticeable. As it became clearer that each faculty was best qualified to judge of matters affecting its own interests, the duties which devolved first upon the chancellor, and then upon the rector, were transferred about the close of the first half-century to the separate faculties. Thus the dean gained increased control of the discipline of the students, so that, when necessary, he was able with the consent of his councillors to decree temporary and even permanent exclusion from the university.

Customs and Discipline. — Besides the regulations to which reference has been made, there were many others which had greater or less influence upon the university life of this period. These related principally to dress, deportment, and morals. The reason of giving so great attention to dress was apparently to draw lines of caste, — not unlike those which may still be seen in the far east. The essential garments appear to have been the hat or cap, the mantle and trowsers; and these must be so worn, or of such texture or color, as to distinguish not only the professors from the students, but also indicate the position and academical standing of each professor. To regulate the deportment and morals there seems to have been needed at all times many statutes. Still, as bad as the morals of students and professors sometimes became, there were always in the faculties earnest and devoted men who successfully used their influence in favor of morality, affirming that "it was better for the young men to remain at home ignorant but pure and innocent, than attend schools where they would be ruined by the prevailing vices." Among the statutes relating to deportment, were many like the following which were adopted by the Vienna University: "The theological students shall not be tipplers, libertines, or frequenters of suspicious places; the law students shall conduct themselves quietly in the lecture rooms, and while there shall neither whoop, howl, nor hiss; they shall also avoid bad company, such as men of infamous lives, brawlers, gamblers, etc." And again, "The students shall not spend more time in drinking, fencing, and playing upon the guitar than in the study of physics, logic, and attending the lectures of their department; nor shall they dance upon the streets, or rove about nights singing, or insult citizens, or engage in games of dice, in any of which, if they persist, the penalty shall be loss of academical privileges and exmatriculation."[1]

As all members of the university nominally belonged to the spiritual orders, they were also prohibited from visiting public dances and inns, and from carrying daggers or other deadly weapons. This latter prohibition seems, however, not to have been well enforced. As the carrying a sword was then a mark of distinction, it is evident that the custom rapidly grew in favor, and that from it eventually sprang the sword-law, and, at the close of the fifteenth century, the duel,[2] which had a most important influence upon student life from the sixteenth to the eighteenth century. The penalties for engaging in duels were fines, imprisonment, confiscation of property, exclusion from the lectures, dismissal and refusal to confer the academic degree; but bodily chastisement was as little known in Germany as it was common in Paris.

Degrees.—In all the faculties three degrees were given; viz., Bachelors of Arts, Masters of Arts, and a degree preparatory to the latter called the Licentiate. It was carefully defined what lectures the candidate must hear, in what order, and for how long a time[1] before presenting himself for examination. The examining committee consisted of a dean and one councilor from each of the nations. A majority vote decided, but a higher or lower baccalaureate rank was given according to the relative merit of the examination. After passing the examination[2] the candidate, as a prerequisite to receiving the degree, must agree to the following conditions: To take part for a full year in the disputations, endeavor in all respects to advance the interests of the university, refuse to accept a similar degree from another institution of learning, and remain for at least one or two years and teach in the university. The giving of the diploma for the degrees of bachelor of arts and licentiate was attended with elaborate ceremonies, and thereafter the graduate was required to assume the clerical garb and tonsure, and, in case of public solemnities, the tabard. This was called the promotion; it is still observed in some of the German universities The first degree conferred the right to deliver lectures (and in very early times it had no other object than this), but only upon a limited number of subjects, and these must be given under the direction of the dean and the four examiners. This degree was recognized as valid in other universities, and gave to the person so honored, when called to the faculty of another university, equal rights.

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[1] Von Raumer: *Die Deutschen Universitäten*, pp. 25, 26.

[2] During the twelfth and thirteenth centuries bloody brawls were very common in Paris, Padua, and Oxford, but the duel had its origin in Germany. Still throughout the fourteenth century a duel in the later signification of the word was not known.

The degree of licentiate (*licentiatus*) was at first conferred only by the chancellor. A little later this right was transferred to the faculties, but only candidates of unblemished character were admitted to the examination, for it was said of this degree that it opened the way to distinction (*portæ dignitatum*). Otherwise the conditions were similar to those already named for the baccalaureate examination, — which must, of course, precede this, — but the requirements were measurably increased so as to correspond with the greater honor which this diploma (*litera licentiatus*) brought to its possessor. The candidate for this degree in theology, in addition to other qualifications, was required to be at least thirty years old, and have completely mastered the great work, — *Liber sententiarum*, — of Peter Lombard. The requirements in the other departments were as follows: In law it was necessary to study seven years, and hear the lectures upon canonical and civil law, and devote one year to the

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[1] Eight years' study was required in order to receive the degree of Bachelor in Theology, and from three to four years to receive a like degree in medicine and law. In no case was the candidate admitted to an examination unless he had fulfilled this requirement.

[2] Examinations for bachelor's degree occurred four times a year; for master's, but once a year.

"decretum;" in medicine the candidate must be familiar with the aphorisms of Hippocrates and extracts from the teachings of Galen; and in philosophy, with the first six books of Euclid and the larger works of Aristotle, — namely, logic, ethics, metaphysics, and politics.

In all the faculties the defense of certain theses concluded the examination, in conducting which it was not permitted the candidate to make use of notes, or say anything in conflict with the accepted doctrines of the Romish Church. With the permission to deliver public lectures came also the privilege of putting on the insignia of office, espically the "epitogium," — which differed only in the material from the mantle worn as the symbol of the master's degree, — the finger-ring and the "caputium" or "birretum," which was like the doctor's hat in France and England.

Among the various titles given to the acting professors of the different faculties were such as the following: *Magistri actu regentes, Magistri lectores, Ordinarii legentes*, and, with reference to their rank at promotions and examinations, *Magistri præsidentes;* but the title of *Professor*[1] was not, during the fourteenth century, customary in Germany. At this period the title Master (*magister*) seems to have ranked as high as Doctor (*doctor*), but custom sanctioned the use of Master for theology and philosophy, and Doctor for law and medicine. Not long after this, the latter title was also employed for theology, but not for philosophy, — relying on the best evidence we have, — until late in the fifteenth or the beginning of the sixteenth century. After having obtained the first and second degrees, the requirements, necessary to secure the third or master's degree and enter into the senate of the faculty, were mostly ceremonious. These consisted in giving fees to members of the faculty, as well as to the beadle and other officers, a doctor's hat to each of the doctors, and taking the customary oath to remain in the university for a specified time, and assume the duties usually expressed in the words "*legere et regere*." To save the expense of this formal act of promotion many preferred to remain simply licentiates, though this debarred them from proper membership in the faculty.[2]

Lectures. — As in the formation of a government, so in the matter of lectures, a system had to be developed. At first every professor in Prague, as at Paris, was at liberty to read at such hours and upon such subjects as he chose, which resulted, naturally, in great confusion and bitter rivalries. Thus it often happened that several chose the same subject; others, to the great detriment of the students, neglected the more difficult and more important subjects, and treated those which were less abstruse and more popular in order to secure a larger attendance; a few, instead of delivering their lectures publicly, read them privately; while still others could not agree as to the time and place for their lectures. But in 1397, to obviate this difficulty and introduce, as was thought, a better order of studies, the lectures were divided into *ordinary* and *extraordinary*. In accordance with this division it was agreed that certain books[1] which were considered most important should be called ordinary (*libri ordinarii*), and that the lectures upon these should begin about the middle of October and continue throughout the year. The masters arranged among themselves the subjects and lecture-hours according to rank and period of service, but with the understanding that lectures of this class should be confined to the morning hours.[2]

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[1] It occurs, however, in 1389 where the teachers of medicine styled themselves "*Professores Artium Liberalium*."

[2] There were always few masters compared to the number of students, and this, doubtless, explains the custom, at one time commonly practised, of asking certain students to read lectures to the others.

It was only when permission had been obtained from the senate of the faculty that a bachelor of arts could give lectures upon the subjects which were classed as ordinary, while upon topics outside of these, lectures might be read, — but only in the afternoon, — by either masters or bachelors of arts or licentiates. In these afternoon lectures the teachings of certain standard writers, generally those of Prague, Paris, and Oxford, must be literally followed. This arrangement exerted, necessarily, a most baneful influence upon learning, as it narrowed the treatment of all subjects, and left no opportunity for freedom of thought.

The practice of dictation which originated in, and was still common to Paris, found but small encouragement in Germany, where the professors, selecting the rarest and most expensive works, read the text word for word, and accompanied the difficult passages with short explanations. As the Socratic method of teaching and the taking exceptions by the hearers were never practised, as in France and Italy, this was much better than simple dictation, — an evil from which the German universities in the later centuries have not been wholly free. Besides the public lectures there were private exercises (*exercitia magistrorum cum scholaribus in privato*); that is, the professors, for a higher fee,[1] met the students privately, and entered into a fuller discussion and explanation of the subject chosen than was permitted in the lecture-room.

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[1] Only masters of arts were thought qualified to discuss the work of Peter Lombard, already referred to, while bachelors of arts were permitted to deliver lectures upon the Bible, — the latter being then held in much less esteem.

[2] A professor who failed to complete his course of lectures (*pensum*) at the prescribed time forfeited his rank, or, at least in Prague, was not permitted to treat the same subject again.

Disputations. — One day in each week was set apart for the public disputations, which were held under the direction of the deans and councillors. As each candidate for the degree of bachelor of arts was required to take part in, at least, one of these disputations before his promotion, — the question having been previously announced, — a constant oversight was demanded. The disputations were regulated by statutes, were divided into ordinary and extraordinary, and the time and manner of holding them were definitely fixed. The philosophical were most popular, though they were customary in all the faculties. It was said of them that they "most adorned and fructified the human understanding." This, certainly, seems to be true, that they aroused latent talent, and were for the time of great importance because of the inadequateness of the instruction imparted. The "ordinary disputation" of the philosophical faculty took place usually on Friday or Saturday, and all, both teachers and students, were required to be present unless excused. There was a presiding officer (*magister disputans*) and, at least, three disputants for each of the three questions discussed. At the invitation of the president others took part, but always according to rank and age. The most solemn as well as most difficult of these exercises was the disputation "*de quolibet*" which was held once a year, usually in January, and continued through many days, as all must participate in it who had received the master's degree. The officer called "*quodlibetarius*," who presided at this latter disputation was chosen a half-year before from the oldest professors, and, as his duties were considered especially arduous, he received, besides a stated sum of money (c. $20), a "doctor's cap, a pair of gloves, and a pair of black trowsers." There were still other disputations held in private, and especially in the interest of those who wished to acquire academical degrees. During the fifteenth century the disputations became less and less frequent, and at the beginning of the Reformation we find evidence of their continuation only at Vienna. While it may doubtless be said that they often degenerated into the discussion of captious and subtle questions of scholasticism, this must also be acknowldged, that they exerted not only a powerful but also beneficial influence upon the fourteenth century.

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[1] The tuition fee for the public lectures was definitely fixed, and no one could take more or less.

The custom of meeting the students privately is still retained in Germany, though no fee is charged.

The Influence of Scholasticism upon Theological Study, and the Reaction. — The first French teachers who came to Germany brought with them a love of scholastic philosophy and theology, and the unfortunate result was that their teachings tended to check the further progress of speculative thought. The origin of scholasticism must be sought for centuries earlier, when it was zealously supported by the leading men of the time,—by an Anselm, a Lanfranc and an Erigena. It had flourished at first in the cloisters and later and lecture-rooms, and, by enlisting Aristotle in its service and adapting his teachings to the tendency of the age, had become a constant authority. Where it was possible it endeavored to make its philosophy harmonize with the sayings of the church fathers and the doctrines of the Romish Church, but when the two seemed irreconcilable the maxim was readily applied, that what was *theologically false might be philosophically true.* It naturally followed that theology became a mere "play-ball of cross-questions and equivocal answers, where truth could no longer be separated from error."

To the theologian of this period the Bible was mostly a sealed book, and of church history and patristic he knew as little as of Hebrew and Greek. So apathetic and unfriendly was the spirit of the age to the most vital truths, that even the teaching of an Abelard found acceptance only among the lowest classes. It was an opportune moment for the universities, and had they fulfilled the design of their founders the weight of their increasing influence would have been thrown against this encroaching spirit. That they failed to meet so reasonable an expectation, and ceased to a great extent to be centres of learning, is principally chargeable to the strength of the spiritual orders, and especially to that of the Mendicant Friars who filled many of the chairs in the university, and, while holding fast to all the old traditions, regarded every innovation as heresy. Fortunately the people were already awake to the importance of a more liberal culture, and to the clear-sighted it became more and more evident that a reaction against this double hierarchy of church and scholasticism was near at hand. Just at this time there came from France and England an influence not less powerful, which gave apparently the first impulse to a church reformation in Germany. The leaders in this reform were John Wyckliff in England, and John Gerson, Peter of Ailly, and the still bolder Nicholas Oresme in France, to which names should be added that of the learned Leander, against whom so fierce opposition was raised, that he thought his life in danger, and sought protection with the knights of Prussia. Favorable also for theology, and for all branches of knowledge, was the contest then being waged by the Nominalists and Realists, out of which came the brilliant victory of William of Ockam over the idealistic philosophy which gained for him many followers in the universities of Germany and opened the way for the development of a more independent spirit.

The newness of the universities, and the total unfamiliarity of the people with the classic languages, which then even more than now formed the proper basis of theological study, caused the reform of church and clergy to be less rapid and visible here than in the neighboring states. Still great praise belongs to Vienna and Prague, that, at the close of the fourteenth century, they could boast among their university men so many distinguished, earnest, and open opponents of the prevailing abuses. Among these, in the period between 1350 and 1394, were three, — Conrad of Stiekna, John of Milicz, and Matthew of Janow, — who, by their hostility to all forms of immorality, and their demand for a divinely attested religion, gained afterward among Protestant writers the honored title of "Witnesses for the Truth." In the steps of these followed a long line of noble men like Huss of Hussinecz and Jerome of Prague. Deserving also of special mention is the Vienna theologian, Henry of Hesse, who sought to restore the early purity of the church through an ecumenical council. In his efforts to this end he was heartily supported by the professors at Prague, the Parisian doctors, and the Oxford scholars, — the latter, however, making the proviso that no decision should be valid without the consent of the Roman king. The immediate result of this was a great accession of power to the universities, so that from the beginning of the fifteenth century no important change took place, either in church or state, in which they did not have a decisive voice.

Moreover, at this time the academical practice of disputation was destined to be of special service, and principally in this way, — that it threw a powerful light upon the dark ordinances of the popes, that it sharpened the speculative understanding, and greatly increased the zest for thorough inquiry. It may, perhaps, also be considered fortunate that Aristotle became the authority in theological study, for thus was opened a field for a mental palæstra where those extravagant fantasies which were a characteristic of the age could find no place for development.

What Constituted the Study of Law, Medicine, and Philosophy.— As the ancient languages were eliminated from the curriculum of the students of law, it necessarily followed that the study of law was exceedingly limited. At the beginning of the fourteenth century it was only thought necessary to acquire the knowledge which the two preceding centuries had transmitted, and gain familiarity with certain customs which, having long obtained, had come to have the binding force of law. It was not until 1356, when the Golden Bull of Charles IV. was issued, that any basis for German state-law was laid. Twenty-four years later Ubertus of Lampugnano was called to fill (according to Voigt) the first public chair of state-law in the University of Prague. Though this subject henceforth received increased attention, still it is evident that for a long time the lectures in the department of law were limited in general to canon or church law, — that is, to a branch of theology. Roman law, meanwhile, remained excluded from the curriculum of the lectures, and no academical honors were allowed to be given in it.

Besides the canon law according to the decretal, there were taught the feudal and German laws, — in part a relic of barbarism, — but neither a philosophy nor history of law was known, and, least of all, was the knowledge of antiquity presupposed. But about the beginning of the fifteenth century, Palsgrave Frederick I. appointed two professors for the "Institutes" and "Pandects" in the University of Heidelberg, and made use of the royal privilege to create doctors of law. Throughout this century the students of Roman, and in fact of all law, were few, but the innovations which had been made were of great importance, and wrought in time a complete change in the laws and courts of Germany. What gave increased attention to the study of Roman law was, apparently, the discovery on the part of the emperor and the various princes that it was in harmony with the idea of absolute sovereignty. The growth of this theory of sovereignty, which naturally met with much opposition from the pope, was greatly accelerated by Marsilius of Padua, who proved from both state and Roman law, as well as from the Bible, that God alone was the supreme ruler of an independent government, and that the mandate of neither pope nor bishop was superior to the royal authority. He even went so far as to adopt the Aristotelian polity of an *αιρετή τυραννίς*, where the people by an election transferred or delegated the highest authority.

These doctrines, which struck at the root of papal dominion, were eagerly seized upon by the keen dialecticians of the time and found wide acceptance. Still so conservative was the spirit of the universities, that long after the dogma of papal right had ceased to receive any recognition from the rulers, it continued to be taught in the lecture rooms. Only in the following century did the universities catch step with the prevailing ideas, and lend their great influence to give increased activity to the spirit of reform.

In the fourteenth century the science of medicine was still in the hands of the monks, where, by means of the prevailing superstitions and a blind faith in the Arabian physicians, it had for generations been easily retained. In spite of the efforts of Frederick II. to introduce the teachings of Hippocrates and Galen, the Arabians had remained, at least to the fourteenth century, the acknowledged teachers of Europe not only in the science of medicine, but in the study of the heavens and the earth. One of their champions in the thirteenth century had been Peter of Abano whose teachings, following the natural philosophy of Averroes, had served to increase the superstitions of the people, so that interpretations of dreams, astrology, and alchemy were considered necessary helpmates to the science of medicine. It should, however, not be forgotten that the Arabians had formed an abstract system of philosophy, and by the investigation of principles had enriched the knowledge of medicine; yet nearly all this was lost through the subtlety of their art of teaching, which was thoroughly imbued with the spirit of scholasticism. They were, moreover, the pupils of the celebrated Greek physicians, who are now acknowledged to have been the creators of the science of medicine.[1]

The first medical school in the Christian world was founded in Salerno in 1150, and its high standing was so fully recognized that for two hundred years it ruled as sole authority in medicine. Its founders were a few learned men who had attended the lectures of the Arabian physicians in Spain. In Paris an acquaintance with the teachings of the Greek physicians, particularly with those of Galen, dated back to some time in the thirteenth century; and, though the medical monopoly was thereby largely taken out of the hands of the monks, but little was gained, for astrology, magic, and theology continued to be so intermingled with the study of medicine that the latter ceased to rest upon any scientific basis. In Germany, as in the neighboring lands, medicine was hardly worthy yet to rank as a science. The belief in astrology, — from which there were now the first signs of release, — and ignorance of the classic languages may have been the cause. Surgery, which had already been a subject of instruction at Salerno, dietetics, chemistry, pharmacy, and other subjects of medical study which the ancients had subjected to exact treatment, were excluded from the courses of lectures. Still it must be considered most fortunate that, while the teachings of the Arabians were not wholly rejected, translations of the works of Greek physicians were the basis of study, and that every academical teacher was required to subscribe to the doctrines of Hippocrates and Galen.

We find that the same superstitions which prevailed in ancient

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[1] It was formerly held that the medical art came from Egypt, but this has been found untenable. — *K. Passow.*

Greece prevented the study of human anatomy[1] among the civilized nations of the fourteenth century. A papal decree of about 1303 peremptorily forbade the dissecting of human bodies, and, though this met with much opposition from the Emperor Frederick II., he found that all his efforts to change public sentiment were useless. Others, like John Gerson in France and Petrarch in Italy, sought to dispel this superstition, but it was too firmly intrenched in the thoughts of the people to be easily removed. Still the new ideas gradually found acceptance, but always more slowly in Germany than in the other lands where the intellectual quickening had begun. Not until the sixteenth century was the first anatomical school founded in Prague.

It probably cannot be questioned that, in general, in the older German universities, the position of preëminence was given to philosophy. Even in the oldest statutes we find it spoken of as a true fosterer of the other sciences, because the students were required to pursue their philosophical studies before entering upon any others. It was originally called the faculty of arts (*Facultas artium*), having received this name from the seven liberal arts, of which the first three, grammar, rhetoric, and dialectics formed the trivium, and arithmetic, music, geometry, and astronomy the quadrivium. These seven arts were expressed in the following verse:

"Lingua, tropus, ratio, numerus, tenor, angulus, astra."

When the title *Magister artium liberalium* was used these seven arts were meant. The study of the first two was considered necessary to a proper understanding of the third, to which the greatest importance was attached; for, the discussion of those subtle questions of dialetics, as has been already stated, was believed to be the best preparatory exercise for securing true discipline in all other branches of learning.

The works of Aristotle, of Hispanus and Boethius, were the principal authorities in dialectics; Priscian, Donatus, the "Doctrinale" of Alexander de Villa Dei, the Latin metrical grammar, and the poem called "Labyrinthus" of Eberhard de Bethune and the "Poetria Nova" of the English Gottfrid, furnished the models for grammar and rhetoric. In the study of the last four arts, — the Quadrivium, — the work known as Algorismus[2] was authority for arithmetic; the six books of Euclid and the Perspectiva (1280) of John Pisanus, for geometry; the Sphaera materialis of de Sacro Bosco, the Computus cyrometricalis (almanac) and the Ptolemaic system, for astronomy; and the work of John de Muris (1330) for music.

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[1] In the flourishing period of Alexandria, the dissection of human bodies was for a time practiced, and also in Italy at the beginning of the fourteenth century by Mondini de Luzzi.

[2] Derived from the Arabic *al* and ἄριθμος, or, perhaps, better according to Reinaud from the name of the Arabian author, Al-Kharizmy whose writings when translated into Latin introduced the "numeration system" of India in the West.

No Revival of Classical Study in the Fourteenth Century. — Two centuries before the German universities were founded the pure forms of the Latin language were taught at Naples in Italy, at the universities of Toulouse, Paris, and Montpellier, in France, and Latin continued the chief literary language of the whole south and west of Europe, while as yet it remained almost unknown in Germany. In the fourteenth century, which witnessed the rise of the German universities, a great intellectual awakening had begun in Italy, and Petrarch and his friend Boccaccio were using their extended influence with states and princes for the restoration of the old literature, and by the success which was crowning their efforts they were already making the critical study of the works of Roman and Greek masters the common property of the world. Still, during even this century, it is not easy to discover to the north of the Alps any trace of this movement. It did not affect France and England; nor was Germany, though it had in many respects made rapid advancement, ready to welcome this new spirit of the renaissance.

Even in the first half of the fifteenth century, Aeneas Silvius found it very difficult to arouse the spirit of reform. In the lower schools he complains of a lack of preparation; among the university professors, that there was no determined coöperation; in all Germany, a reluctance on the part of the rich and powerful to establish and endow chairs for the study of the languages and historical sciences. Not until the latter part of this century do we learn of professors of oratory and poetry at Erfurt, who were ready to proclaim the new doctrine that "only in the school of the ancient classical writers could one learn the art of speaking and writing well."

But even in the fourteenth century the basis was laid for the restoration of classical study, and this honor belongs to a few men of culture who wandered to Italy to secure at any sacrifice the treasures of ancient learning. Among these Gerhard de Groote (1340), born in Holland, deserves the chief praise, since it was he who put an end to the pernicious influence of the Mendicant Friars, secured endowments for the schools and made collections of the rarest manuscripts It was to him also that Germany was indebted for the training of Florentius, Thomas á Kempis, John Reuchlin, Rudolph Agricola, and many others of less influence who became afterwards the leaders and encouragers of classical study in Germany.

Though the century which gave rise to the universities failed in many respects to meet the expectations which had been formed, it is not the less true that great progress was made. This is especially seen in the German language which gained much in richness and pliability, and began to adapt itself more and more to the purposes of a written language.

The Founding of Leipzic University.—The last years of the fourteenth century were about to close when a struggle began which was destined to aid much in the emancipation of thought, and in preparing the way for a better civilization. The leaders in this new movement were John Wickliff in England and John Huss in Bohemia, and the views of the former had already been embraced by a large number of the professors in the University of Prague, and made the subject of their lectures. In the dark, stormy years which followed there was no braver defender of these views or more moderate, dispassionate spirit, than John Huss,—the head of the Bohemian national party in the university, and the reform party in the church. He was master of arts and bachelor of divinity; dean of the philosophical faculty in 1401, and rector of the university in 1402; confessor to the queen and preacher in the university chapel; and, more than all, the favorite of the people, and well fitted to be the fearless exposer of vice and the leader of a great reform.

It was at this time that the three foreign nations, as already stated, arrayed themselves against the single Slavonic nation,—the native Bohemian. In self-defence the king decreed that, in the settlement of all university questions, the Bohemians should have three votes to one for the three other nations. This action greatly incensed the three foreign nations, which numbered some five thousand teachers and students, and resulted in their withdrawal in May, 1409. Nearly all of these set out for Leipzic, and there founded the Leipzic University, which they divided (according to Von Raumer) into four nations,—a division which was retained, in name at least, until some time after the opening of the present century. By this withdrawal the University of Prague suffered such loss in numbers and prestige that it was never again able to regain its position and influence. Still the seed which had there been sown had taken root, and only a century later it brought forth the golden fruit of the Reformation.

Note.—In the preparation of the foregoing article the writer acknowledges special indebtedness among others to a small work on the first German universities by Passow, to Heeren's historical writings, and to Meiner's history of the German high schools (*hohen Schulen*).

MANUAL LABOR TRAINING IN THE PUBLIC SCHOOLS.

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Whether it is expedient or not to teach handicraft in the public schools is a simple, practical question. It does not involve any discussion of workshops in endowed institutions, for what is entirely proper and necessary in such places where the expense is met by the income of funds given for a specific purpose, is quite another thing in a public school where the expense is not necessary and is met by taxation. And our theme can be discussed without any reference to drawing or to sewing, for the need of these is universal; the need of a knowledge of tools is not. Some dexterity in the use of tools is handy, but not, necessarily, so essential to every person that without it he is likely to be unfitted to discharge in a proper manner the duties of life.

Ever since the close of the war the public mind has been more and more disturbed with suspicions and inquiries and surmises in regard to the public school, and at last a vague but more or less justifiable notion that their work is not practical enough has taken shape in a demand that manual training be included among the subjects to be taught. Who makes this demand? Not any body of teachers or of superintendents; not pupils nor trades unions; not societies organized for social economic or social reform; not newspapers, except in occasional paragraphs as a matter that is talked about: not any body of voters; not any Legislature; yet the project is discussed a good deal, and being now in the gristle, can be profitably shaped by thorough treatment.

Whatever definite plans have been prepared can be easily reduced to two; viz., one to make workshop practice a part of general, compulsory education, and the other to erect optional high schools, in which study and shopwork shall each occupy one-half the student's time, where boys who like the manual arts can be properly trained. Before discussing these plans I will venture to call to your attention a chapter in the history of Athens, which seems to me to suggest in a most instructive manner the important truth which lies at the heart of this subject.

Under the ancient division of the people there were four tribes,—

cultivators, warriors, goat-herds, and artisans. Of these, the artisans were lowest in social standing, wealth, and influence. The reforms of Clisthenes, which about 500 B. C. gave birth to the Athenian Democracy, failed to change the popular estimate of handicraft. The education of the Athenians, wonderful as it was in its results, did not reach down to the workingmen. There was Socrates to teach Alcibiades, but no one to teach those Greeks whose names have not reached us. The demiurgi or artisans held the lowest place in Athens; not because they were poor workmen,—the Parthenon forbids,—but because they were ignorant; and it has resulted from this unequal diffusion of intelligence that, while Greek art reached an unattainable perfection, her arts are forgotten. The work of the artisans of Greece show that the utmost skill in handicraft is compatible with the densest ignorance, and offers in itself no security to private character or to public virtue. The truth which is contained in this passage may well run as a sub-base tone through the whole of this discussion.

We are first to consider the proposition to incorporate workshop instruction with the lower grades of the public schools, so as to add new force to the education of the masses. The end in view is to keep boys in school longer by offering them additional aid toward securing a subsequent livelihood and to check an alleged tendency among boys to shun plain life; some even go so far as to regard the fingers as a new avenue to the brain, and think that great pedagogic advantages will be given by the new method, so that boys may make equal attainments in arithmetic, reading, and grammar in less time. The latter claim I do not think I fully understand; if I do, it is analagous to that of one of my shipmates on a steamer, who having heard that in consequence of a failure in one engine, the propeller which had been making forty revolutions could not make but thirty, argued with much warmth that so much additional force could be received and imparted by the thirty revolutions as to produce a speed equal to that of the previous forty. Undoubtedly some boys will take an interest in tools who do not like their books, and others are benefited by the exercise so that the shop-work acts like the phosphorus on a match; but few good teachers will demand such an indirect and costly auxiliary in order to stimulate a few dull boys. They will still find the eye and ear nearer to the brain than the hand.

But the suggestion of correcting the aversion of pupils to plain living is very important, and deserves serious attention. There is some truth in the complaint that boys and girls are educated away from the life they must lead; that they know too much of books and too little of things; that they seek the softer labors of life, and are especially averse to manual labor; that, in short, they shun shops and farms, and seek banks, stores, and offices.

A recent writer in the *Atlantic Monthly* applies to our times Lord Bacon's complaint against the English schools of the seventeenth century, that they "fill the realm full of indigent, idle, and wanton people." It is claimed that if workshops were coupled somewhere with existing schools this evil tendency would be arrested; that industry would take the place of idleness; that scholars would not leave school so early, or, otherwise; that boys would become happy mechanics instead of gambling and often dishonest clerks; and that girls would forswear the frivolities of fashion and culivate the sober virtues of their grandmothers.

It cannot be assumed that the people have not a right to set up workshops in their schools if they wish. The people of any State have a right to say what shall be taught in their schools, but no point settled by vote is settled unless the decision be both just and expedient. The schools have suffered much harm by ill-considered changes which have proved to be unwise. The people of Indiana, at least, will not hesitate to adopt any measure which can be shown to be necessary in order to give their public schools the highest efficiency. The question is not whether the people can be induced to order handicraft taught to their children, but, whether they ought to order it.

Inquiring into the expediency of the measure, a teacher must say that it seems strange to those who who have had any experience in teaching handicraft that an institution, which is really so inefficient as the public school is said to be, should be expected to undertake it. If it substantially fails in teaching what it now undertakes, what right have we to expect better things when a machine-shop is laid upon its over-burdened back? Complaints against ineffective methods are not met by increasing the amount of work to be done by those methods.

You say the school educates the boys away from the life they must lead. Who knows what life they must lead? Are you trying to lay down Madison's ever-vanishing line between rich and poor? Are you supposing that even a denial of the common right of boys to common knowledge will keep him from aspiring? Again, while the substance of knowledge and the methods of improving it must ever remain the proper object of the art of education, it is idle to arrogate or assign to the school the control of, or the responsibility for, the product of our complex social training. It is almost cowardly to lay to the charge of the school the unwise discontent with plain living, the haste to be rich, the foolish rivalries, and the general desire to be famous, which are as old as civilization and apparently inseparable from it. These evils may be enhanced just now by the great material prosperity of the country, by the unchecked circulation of corrupt books and papers, by the general laxity in home-training, and by a certain weakening of the power of great examples over life and character. Be that as it may, most of the complaints that are so loudly made against the schools should be laid at other doors. It ought to be clear to the most superficial observer that the influence of the school checks rather than helps the speed of these evils. The only excellent way of obedience, industry, and method is shown there by precept and example; the value of principles over rules can be learned there, and, generally, right and justice are daily made to prevail. For the only hope of success in this world lies in obedience to law; the only preventive of idleness is a habit of industry founded on an obedient spirit.

Skill in handicraft is no security against thriftlessness and vice, unless it rests upon character. The worst evil in shops is the danger that the most valuable workmen, upon whom at critical moments everythings depends, are liable at those moments to be overcome by appetite and so to fail. It is ascertained that no one has yet shown just how or when or to what extent the addition of handicraft to the cause of the public school can make it more effective in resisting and curing the evils of the times. Manual training has no elixir for turning a lazy boy into an industrious one, or a stupid boy into a bright one. The whole force of the reasons urged for this change is derived from the alleged failure of the public school. But schools have not failed. Concede to the critic all the boys who seek counters instead of the benches; all the girls that cultivate the graces of the parlor instead of the kitchen,—a concession no one can possibly make,—and the balance is heavily in favor of the school. To what other cause will anyone assign the intelligence of this people which is the chief bulwark of their liberties? For what other good do the people spend such sums so freely and ungrudgingly? Of what other adjunct of liberty are they so jealous whenever it is threatened by cupidity or priestcraft? If the simple history of the public schools be a story of failure, may God fill the world with such failures!

But suppose handicraft is to be taught: in order to produce the desired and promised effect upon the masses, it must be made compulsory, and room must be made for it as a fixed place in every school system. It is not easy to find that place, for the fact is that the time now given to the training of the average boy is barely adequate to the necessity of teaching him those branches which, as all agree, he must learn. Four years ago I made a careful study of the school statistics of Massachusetts, and ascertained that less than 90 per cent. of the registered pupils are found in school at all, more than 50 per cent. are in the three lowest grades, and less than 4 per cent. reach the high school. Deducting from the school-attendance the loss of time due to sickness, truancy, and accident, we find that the average pupil of our public schools receives, at the public charge, 166 weeks of instruction, or a little more than four school years.

Superintendent Hinsdale states that in Cleveland 68.8 per cent. of the total enrollment are in primary grades, 26.2 per cent. in grammar grades, and 4.5 per cent. in the high schools; or, in another way, of 108 children who enter the primary grades, one graduates from the high school; of 60 who finish the primary studies, 20 complete the grammar studies; of these 20, four take the second year in the high school and one graduates. I have not been able, after much effort, to obtain precise information upon these points from the statistics of Indiana, but the opinion of many well informed persons is that the showing would not be very much better.

Compulsory manual training, then, must be imposed upon children under fourteen, whose school-life cannot much exceed four years. Before doing this, it would be well to inquire why so large a majority of children disappear from school so soon. It is not of choice, for most of them would prefer school to what awaits them. It is not the fault of the Commonwealth, for she is, like Providence, kind even to the thankless and undeserving, and maintains truant-officers to compel from highways and hedges those for whom her feast of knowledge is spread. It is not because of the unwillingness of parents, for the act that takes the children from school often breaks their hearts. It is not because the course of study is ill-adapted to the end which the school seeks for; that is the result of a broad and deep induction, and, except that it covers too many topics, the course of study is practically unimpeachable. The reason lies deeper than all these. It is the hard necessity of bread and clothing. The statistics of the Bureau of Labor show the stern visaged truth, that in towns the average wage-earner, who is classed either as an operative or an unskilled laborer, cannot earn enough to feed and clothe and house more than four persons. As the average family in such cases consists of from five to seven, some other means of feeding and clothing the surplus above four must be devised.

That explains the statistics of school attendance, especially when it is explained in connection with the havoc that disease and death makes in homes where every law of health is ignorantly set at defiance. Now what is it best and just and kindest to give the children of such homes, — for they are the masses in our schools? A little manual training, which cannot help them in any large way, so little it must be; or as much knowledge of books as possible, which will draw them to libraries instead of to grog-shops in their evening lonesomeness; as much knowledge of natural history and drawing as possible, which will enable them to find companionship in nature, and look without a stupid stare into her unwithered, kindly face; as much knowledge of the great examples of history as possible, to persuade them always to look up; as much knowledge of themselves as possible, that they may be able to bear adversity with courage and prosperity without exultation.

Considering how short school is and how long life is, is it better to emphasize the mechanic or the man in the child? It is pretty certain that the attempt to do the one will fail; to do the other may succeed. For there is another matter to be thought of in the lives of the artisan country, and that is that handicraft occupies an ever-narrowing machinery and an ever-widening domain. With the practical extinction of the independent manual arts, especially those that were essential to the comforts of daily life, the just pride of the artisan in the work of his own hand, a most important social force, has vanished; in its place we have chiefly mere machine-tending. Not that there is not some stimulus in watching machinery, and that now and then an invention would be suggested to a sympathetic mind; but this is not an equivalent for what has been lost. The feeling with which a skillful watchmaker contemplates the equable motion of a time piece, every part of which he has himself finished and adjusted, is very different from that of the man who sets and guides the stamping machine, which delivers a hundred gears a minute, or listlessly does his one part in assembling and adjusting the parts of a watch as they come from many machines. In one case the man has put a part of himself into his work; in the other, he has put into it so many hours of his time, well aware that a small amount of training would enable any other man to do as good work as his. The watchmaker may outstrip his best predecessor, and to do this strains every nerve, practices patience, watchfulness, courage and faith; the watch-producer soon reaches the level plateau of his life, above which there are no heights, for the machine does the work. His life becomes monotonous, and out of this monotony spring special temptations. The more he knows, and the more he becomes good company for himself, the better he is.

There is another important thought about this revolution in the mechanic arts. If, as Adam Smith says, it now takes twenty distinct operations and as many distinct operators to make a pin, all pins must be cheaper than they were when only pin-makers made them without machinery; hence many more people can afford to buy pins, the production is greatly increased, and possibly more persons can get a living by making each one-twentieth of a pin than when each made a whole one. But another result has been found to be more probable, — that each operative in a pin-factory has a great deal of idle time on his hands. To enable him to make a good use of this idle time is no less the duty of the school than to guard against the narrowing tendency of his minutely subdivided avocation

I am not forgetting that skill in handicraft is not absolutely extinct, but am urging that its field is so narrowed that the masses are no longer found there for whom the public school must care. The great majority of boys who go from school to shop swell the ranks either of unskilled laborers or of those whose life is spent beside machines.

There is another failing under this theorem. Suppose you set up work-shops and impose upon all boys, as you must, a certain number of hours of practice in them. Here is a boy without the slightest aptitude for tools, but with marked intellectual powers. If I were his father I would be likely to say: "Forcing that boy into a shop is an outrage, and I must charge myself with the expense of educating him in a private school, though I pay my taxes and prefer the fine democratic influence of the common school." Now you say, while we will excuse this boy from the workshop, there will appear many other applicants for excuse on similar grounds, and you have at once that ugliest foe of all good, — a feeling of caste limitations.

If any further argument is necessary to show the futility of school workshops in general, it can be drawn from a chapter in the history of education which is seldom read; viz., the many efforts that have already been made to incorporate manual training with general education. Precisely the same arguments were spread out in the catalogues of schools that once flourished and declined between 1830 and 1850, as are now urged by the advocates of workshops for every school. All attempts to organize industrial work in connection with academies and colleges have failed, and for the same almost obvious reasons must fail in the lower schools.

These conditions and others like them have been so influential with a large proportion of those who desire handicraft in school, that the demand is now ~~limited~~ to an optional high school. Probably this is all that most thoughtful persons will advocate.

The plan is to offer to boys who have finished the grammar school and desire instruction in the mechanical arts, a two years' course, on the half-time plan, in which one-half of the time shall be spent in study and the other in the work-shop.

That such schools are good can not be denied, but it is not clear that they are entitled to existence at public expense; for although any manual training is a good thing and its result very handy, it may not be the best thing. Optional schools are clear of many of the objections that have been made against general school workshops, yet we must still ask why they should be added to the school system. The presumption certainly is that such institutions belong to the class of professional schools which, according to the genius of Amercan laws, should be sustained by invested funds and managed by corporations. But many reasons are urged in favor of State control, and some of these I will discuss:

First: It is as fair for the State to teach the elements of mechanical knowledge as of the professions. The State School does not undertake to teach the elements of the professions; it teaches the elements of knowledge, which the subtle chemistry of the social body transmutes now into the learning of the philosopher, and now into the intelligence of the artisan.

Second: The State universities teach the professions, and why not the trades? The State university is not a universal feature of public education, but it must certainly be as fair for this institution, when it exists, to teach trades as professions.

Third: Boys will be allured to the mechanical arts by means of workshops in their schools. Considering the significance and increase of trades-unions the amount of our production of everything but good, leading to strikes, "lock-outs," "shut-downs," etc., it is certainly a fair question whether boys ought to be allured away from the shops. Do the mechanical arts need the aid of a school workshop to increase their attractiveness? What assemblage of mechanical processes could be made in any school-building that could compete with the exhibition which every large town presents The air is lurid with the smoke of furnaces; every stream is worried with dams; the din of machinery sounds an incessant call; thousands of workmen go as daily messengers between shop and home, and make familiar in daily speech the marvels of mechanical achievements. This is not limited to a few hours of a crowded school-day, but day and night are filled with it.

Libraries abound in great biographies of the great inventors. Every thoughtful boy can feed his imagination on the stories of Arkwright, Whitney, and Bigelow. This is the real developing school. This face-to-face communion with men excites the boy more than lathes, and engines and spindles. The trophies of Miltiades will never permit a young Themistocles to slumber. The mechanic arts will have unskilled recruits enough without any help from the schools. We may safely leave skill in handicraft to be its own nurse, and whether or not the American artisan be inferior to the Greek, the school must see that he remains as he is, a superior kind of man.

Though the experiments in the manual training schools now in progress are not complete enough to furnish conclusive evidence, yet it is worthy of notice that of twenty-nine graduates from the best of them, ten are now working with their hands; that is, the same proportion of the class as of the community at large have sought handicraft, for about one third to one fourth of every dense population work with tools.

Fourth: Boys take great interest in tools, as in summer schools So they do in boxing,fencing, etc. Occasionally, the interest becomes contagious, and awakens dormant intellectual energies; but it is more likely that this zeal in tools will be mistaken or substituted for zeal in the acquisition of knowledge. It is said that boys trained in school shops, though they can not become skilled mechanics, can acquire skill enough to take precedence of raw hands in the shift for places. A large acquaintance with the wants and wishes of employers in shops and factories justifies me in saying that this hope is not well founded. Of two boys, otherwise of equal merit, one of whom had spent his last two years in a good school with a workshop, and the other in a good school without a workshop, most employers would prefer the latter. The man who is about to employ an unskilled boy inquires into his character and his capacity to learn his business; and the tender of a smatter of tools would be a disqualification in the mind of many a man, because it would argue a certain assurance of knowledge which the boy could not possibly possess and might not overcome. The man who employs men in shops wants each one to learn as soon as possible, if he does not already know, how to do the one particular thing needed, and to remain doing that as long as possible; hence, looking at the side of the employer or of the employed, it is better for the latter to secure all possible knowledge, such as the school can give, than to anticipate, at the expense of this knowledge, the labor of the shop.

But there is another more serious objection to this argument for school shops that has not yet been met. Why should manual traint ing at public expense be restricted to the use of carpenters' or machinists' tools? It is answered, "A hammer is a fundamental tool." So is a trowel. The chances of getting employment are rather better for a mason than for a machinist. It is possible that the average citizen uses a hammer far oftener than he uses a trowel; but we are not now speaking of what it is handy for him to know, but what is essential. It is not yet known what natural or reasonable limit can be set to the trades that should be fostered by a school which is maintained at public expense for the benefit of all citizens. I know that some effort has been made to show that the elements of trades can be taught in a certain generic way, but the experiments in progress to demonstrate this are not yet conclusive enough to warrant the public schools in relying upon them.

Fifth: Manual training in the public schools will turn the minds of boys towards polytechnic schools, and so promote the new education. I do not see why it will. If the advantages of a technological course are not strong enough to draw students, it is not easy to see how they will be strengthened by teaching them handicraft in public schools. The polytechnic would not suggest such a change. It is very clear that her work will be rendered more efficient by better work in the preparatory schools of the kind they are now doing. What the polytechnic can do for boys depends upon what they bring to her almost as much as upon what they draw from her stores.

There is one change that might be made in the studies of the higher grammar schools which would be advantageous to the polytechnic student, and not disadvantageous to any other scholar. By shortening the time spent in the study of geography, or omitting some of the studies of the high school course, or by doing everything more philosophically, time could be found for instructing all pupils in the six mechanical powers. The necessary apparatus can be had for $20, the teacher can easily prepare himself for the work. Lads of from twelve to fourteen readily take an interest in the subject and can comprehend its elements; and it seems to me, in these days of mechanical production, a very important kind of knowledge. It does not seem to me an exaggeration to claim that boys who are thoroughly taught the simple principles of the six mechanical powers have more useful knowledge, as far as the school can give it, than they can ever get from a school workshop. They then carry into the shop, omitting which the shop can not give, a knowledge of the principles of all machines, and the ability, by means of books, to make the shop an auxiliary in their never-ending education. If the reasons urged for this innovation upon the established order of things have been shown to be inconclusive, I would like to present a few general thoughts upon the subject.

It is safe to rest upon the certain endowment of private institutions for the teaching of handicraft. Nearly $10,000,000 have been given to found institutions of technology, and mainly by private givers, since 1868, and the good work still goes on. This fact at once commits the wisest of donors against depending upon the State for supporting technology, and gives the greatest security for its future.

All the writers and speakers who have advocated manual training for boys in the public schools have signally omitted any equal care for the girls. The only contribution to their cause is the pleasant suggestion of our friend the President of the Salem Normal School in Massachusetts, who says that girls in that school, having tried the workshop, like it very much, and are learning rapidly to hit the nail on the head. Before any system of school work-shop can command popular approval, it must be shown that it will offer equal advantages to boys and girls.

Again, it is well to remember that all the experiments in school workshops which have been tried thus far have been tried under exceptionably favorable conditions. An enthusiastic and competent officer in charge of boys, carefully selected with reference to their special tastes and aptitudes, can do marvels in teaching any subject. I have often thought that one such man whom I much admire, were he to assume that Greek is what boys really need, and set himself to teach it with the personal force that he applies to his manual-training school, would show such results that all his neighbors would forsake Mr. Charles Francis Adams and vote Greek into all the schools.

Great personal power in a teacher conceals and atones for grave defects in a system. But we are compelled to consider how a plan of instruction will work in the hands of teachers who may be devoid of magnetism, but who do good work on a sound plan. Very little value can be attached to any of the results attained by manual-training schools as presented in general school management.

But finally, the thought has often crossed me that we may have entirely mistaken the measure and the motive of the popular demand for this reform. My ears are not sharp enough to hear distinctly any call for manual training in the schools, but I do hear in very clear and unmistakable form, a demand that the number of topics should be lessened and the thoughtfulness of teachers increased. The demand for more manipulation, more practical familiarity with fewer things has been construed into a demand for manual training. People are not pleased with smatter, but are always satisfied with mastery.

The question of expense also obtrudes itself. It costs $8,000 a year to run a shop of the kind demanded for two hundred boys. To this add $1,000 to cover the inevitable wear of machinery and tools. The original cost of tools and machinery, including engine, can not be set at less than $5,000. Adding interest on this sum and the cost of the necessary building to the cost of equipment, we are obliged to set down the annual cost of the shops alone at $10,000, or $50 a scholar. This expense is small if great advantages are assured, but too large if the results are at all problematical. In view of the large expenditure which must be made for the common school, the taxpayer has a right, I think, to await the larger results of the experiments now in progress before he adds so large an amount to the annual budget.

If all the twenty per cent. of the boys and girls who enter the grammar schools can leave it with a knowledge of arithmetic that will stand the test of promissory note, a plain problem in percentage, the addition of five columns of figures of forty each, mainly sevens and nines, answers absolutely correct; with the ability to write an intelligible business letter, and read aloud the evening papers so distinctly and so pleasantly that plain people can follow them without too much effort; with knowledge enough of geography to find the place on the map where the last war has broken out, and locate and give the general facts concerning each of the important countries in the world, with the routes of commerce and trade; and with historical knowledge enough to trace the growth of our country and tell the story of liberty, I think the voters will not make any complaint.

There is room for question if this move in the direction of manual training be not an evasion of a pressing duty; for it is always easier to cultivate novelty than to regenerate the old crops. What is wanted is better methods of teaching the essentials of common knowledge, so that the four priceless years of school life shall be more fruitful. For this the people cry out. We cannot avoid this cry by any cunning debates: we must deal with this question seriously, patiently, and honestly. The work of pruning and regenerating, and reforming demand more skill and courage and knowledge than a manual-training school, but it is far more promising. And this work must be done by those who are working from the center of the school system outward, and not by those who, in spite of much earnestness, evidently do not know where the centre is. It is the legitimate work of educators.

Let me close with a noble thought from Professor Jevons' new book, *Methods of Social Reform:* "It is assumed that the main object of education is to promote success in life; but the main object of education is not to promote success in life in any technical sense, — that is, the business of the professional schools, — but to raise the standard of life itself."

PUBLIC PRESS AND PERSONAL RIGHTS.

BY JOHN BASCOM, LL.D.

The most pronounced and the most peculiar external part in the intellectual and social life of our time is the public press. Itself remarkable, it combines a great number of other remarkable inventions, and is aided by all the more surprising devices of the age. Steam-navigation, railroads, the telegraph, the ocean-cable are the familiars of its marvelous power. The increase of periodical publications, their enlarged circulation, their great variety; the division of labor between quarterlies, monthlies, weeklies, and dailies; the extent and rapidity of movement in the daily press, conferring upon it a kind of omnisceince, constitute a theme of inexhaustible wonder and admiration as often as we return to it. Not only is our social life greatly altered in character by this fact; it has made the life and civilization of the masses of men in a way altogether novel in the history of the world. The poorest and the wealthiest may sit at one table, and interest themselves in the same world-wide facts. Wisconsin, with a population of one and one-third millions, has within her own borders three hundred and fifteen weeklies, and twenty-five daily papers; and this in addition to the innumerable periodicals and papers that flow in from beyond her limits. Such a circulation as this must reach and include nearly every person and household in the State. Intercourse to this extent, and of this order among men is a marvelous fact, whose limits we are now approaching, and whose final adjustments are now being made. It is one which must very profoundly and permanently modify the relations of men to each other.

A new experience coming upon us with the rapidity with which the power of the press has been developed must necessarily call for many reconstructions, and, till these have been made, must work in the community more or less of the mischiefs of maladjusted and misdirected force. This statement is very obviously true of the public press. Personal rights are exposed to unexpected and very real dangers by the insatiable claims, and irresponsible activity of the public press. The blaze of publicity it carries with it consumes as well as reveals many things. New conditions both of law and customs were called for as safeguards against the collisions of railroads; new customs, if not new laws, are now required as a fresh reconciliation of private persons and possessions and the omnipresent press, breaking in on many of the amenities of social life, and scattering as news things of private interest only and of dear personal concern. It is time that new defenses should be set up in behalf of the individual, thrust unwillingly into these noisy thoroughfares of our popular life, and there jostled and hustled by the clamorous crowd.

The rights of a citizen that are directly covered by civil law are but a small portion of his entire rights. Custom, public sentiment, the refinements of social intercourse, must greatly extend these rights, and supplement them with delicate consideration at many points, before a community can attain true enlightenment. It is a coarse, unbearable conception which confines personal rights to those directly protected by law, and looks upon any trespass on personal feeling beyond this limit as lying within the liberty of a bold, free citizen. Enlightenment is found just here, in pushing law into the background, and occupying social life with a thoughtful, heedful temper, which sets up at will and everywhere all needful safeguards of human pleasure. A rude community incloses private lands with strong fences, and then makes them only partially safe from trespass; a cultivated community removes these defenses altogether, and finds its fields and yards more than ever its own. The common, trampled everywhere and yielding little to the public life, and the park, protected everywhere and enjoyed by all, are simply diverse expressions of two phases of popular sentiment. Our social life, under the marauding license of the public press, is in danger of being turned into the abused common, open to refuse and to injury of every order, with light contribution to the general pleasure.

The great extension of the press, accompanied with a corresponding extension of its freedom, has tended to remove the slight protection which the law had previously provided for personal rights, and to leave to public sentiment, almost wholly, the duty of supplying this place. There are few prosecutions for libel, and still fewer successful ones. The extent to which, in a free government like our own, the criticism of public men is carried; the value of this criticism, the largeness of this class of public persons, and the lack of any clear limits to it; the ease, therefore, with which public men and private citizens are mingled in political discussion; the strong tendency to make the liberty of the press the watchword of progress; the fact that it is not unfrequently the instrument of reform, have all tended, in the first instance, to turn liberty into license, and to break down the meagre defenses of law. No one will say that the law of libel affords any fitting definition of personal rights in this matter of publicity, or offers any very considerable protection to them. The more necessary is it, therefore, that public sentiment, having won this new field of activity, should at once proceed to guard and govern it, and not mistake the wasteful vulgarity of license for the well-ordered results of liberty.

The liberty of the press has been firmly and warmly defended as a necessary condition of a free government. If a people can not know what their rulers are doing, and can not freely discuss their actions, they can bring them to no sufficient judgment. So obvious is this, and so often have publicity and criticism been used with the greatest advantage, that the liberty of the press is justly regarded as a first factor in a free government. It requires a longer time to discover that the very end aimed at by publicity is lost again, if the press falsifies the facts. That this end is often lost with us is perfectly plain. A partisan press that gives itself habitually to detraction on the one side, and praise on the other; to misrepresentation here and misrepresentation there; that mingles statement, interpretation, and opinions in inextricable confusion, can not give to the people the conditions of a just conclusion. We might as well call the clamor, falsifications, and perversions of the street a judicial process, as to term the perversions of a partisan press a criticism of public men and measures. The American people are neither unusually dull nor unusually unwilling to know the truth; yet the popular mind in reference to the most prominent men, and the most important measures, is full of misconceptions which it is impossible to correct. The trust and distrust of public journals by the average citizen is alike unreasonable. It is a process of no ordinary difficulty for a sagacious and candid person to arrive at a just conclusion concerning the character of a public man by means of political journals. It is very difficult to escape the bias of partisan detraction and partisan praise, so constant and unhesitating are they. The most positive, and probably the most wholesome, impressions made by the political press on a thoughtful man is that of distrust. Candor, caution, consideration, are rare qualities in public journals, and yet how is judgment to do the work of judgment without them? Two distortions, though in opposite directions, are not likely to reach the equilibrium of truth. It is not the mere statements, but the correct statements, of the press that are to secure progress. If we substitute the blindness of partisanship for the repression of tyranny, we have not gained very much. It may be thought that the popular mind is made active and alert by incessant fault-finding and untiring contradiction, and put to its mettle in discovering the truth. It is not certain, however, that surprising prejudice and ignorance remain with the people as the direct results of the unscrupulous assertions of a press far more anxious to reach its own ends than to state facts correctly, or pronounce on them judicially? How many astonishing errors and misrepresentations have attended on reconstruction! If our methods of acquiring knowledge are untrustworthy, we can only confirm ourselves in mistakes. If the press is to be free from legal restraint, so much the more must it come under the restraint of truth; otherwise it increases the labor of every man in finding out the truth, and diminishes his chances of attaining it. He holds his inalienable right of knowledge subject to all the repression, duplicity, and mendacity of those who trumpet the news, as the messengers of a nation. If the political press is to voice to the people the acts, opinions, and characters of public men, it becomes a right of every one, as urgent as the right of the liberty of the press itself, that these things be spoken in quietness and candor. This counter right it remains for public opinion to set up and maintain. It is not statement simply, but scrupulously correct statement, that is called for; and the very need of the disclosure measures the need of its truthfulness. The right to speak is no other than the right to speak the truth.

Another class of facts in which the public is thought to have a direct interest, and so a claim for their full possession through the press, are crimes. In this instance, as in the previous one, a good reason lies at the bottom of the impulse, but one that has often been obeyed in a gross, unscrupulous way. A morbid, mischievous, popular appetite has been gratified to its fullest extent. Neither the public nor the press have been diligent in inquiring what and how much publicity is socially and morally wholesome. Yet the personal rights of every citizen are involved in an exposure of crime which either in meanness or degree, tends to the multiplication of crimes. The public health no more requires care as to the places and the ways in which we bury our dead, than does social purity call for circumspection in the exposure of crime. Very slowly does the community learn the hygiene of morals; and the press enters into this problem as a very dangerous and unmanageable factor. All that is physically loathsome, turned into a spectacle, debases the feelings and makes the man truly vulgar. Equally is this the case with moral corruption. The details of crime are the garbage of our streets, and the press that carefully gathers them up is no honest scavenger even, for it feeds them out again, not to swine, but to men, and women, and children.

The press is often spoken of as the pulpit of the nineteenth century, and this in a measure it is. It follows in honest sequence, therefore, that the press can not declare any and everything. It must fulfill a preacher's duty and preach righteousness. It cannot sink its moral function in mere mechanism; it cannot, being a preacher, offer itself as a servant to gather and scatter news, indifferent to its moral quality. Its work becomes a moral work, whether it will or no; and heedlessly to proclaim crime is to preach it. Like people, like priest, means always the debasement of religion; and like people, like press, may easily mean a press which is lending its own rapidity and intensity of movement to popular vice. New powers carry new obligations, and he who stands in a pulpit cannot preach impurity with any ordinary offense, or with an obscure tres pass on the rights of men. Its own high law is upon the press, whether it obeys it or not; and the rights of others in reference to it are of the same supreme order.

There is a notoriety which the criminal mind mistakes for fame, and is often greatly excited by it. Such an assassin as Guiteau finds a determining balance of motives in this love of publicity. A paper that gives all the brutal details of the ring, subserves the purposes of those who institute it, just as certainly as the combatants themselves. The spectacle of the evil is the very evil, and this the paper by description uses its diligence to extend. If the community prohibits such exhibitions, and the press proclaims them, the press is doing what it can to overreach the law and annul its good results. The moräle of the legal profession has often suffered from the opinion that the true professional attitude is that of indifference to the character and purposes of a client, a waving of private relations, and a willingness to attack or defend as each case requires. Professional duty, if it can still be so called, suppresses the individual conscience and personal patriotism, and submits itself to the interests and aims of a client, whatever these may be. So, also, "The majority of statesmen are too often willing to distinguish between the personal and the political integrity of the statesman." "So much the worse for statesmanship." The press readily pleads a like law with like bad results. Moral responsibility is handed over to that impersonal thing, the community; and the personality of the press, on the one hand, and of patrons on the other, is merged in an inapproachable abstraction. But if the press is to be lawless in this method, and public opinion negligent in this fashion, that impersonal force, the community, on which the responsibility is ultimately devolved, ought to assert itself in the only way in which it can assert itself, as civil law, and redress an evil otherwise unredressed. Liberty is given to the press on the very supposition that it will be conscientiously used, and that the moral sense of all concerned will impose needed restraints, and sufficiently protect exposed rights. If the supposition is not true, the weightiest plea for liberty is taken away. Civil law is put to its rough, awkward work because private opinion refuses to perform its more delicate and efficient function.

The press is also sure to lose. in vigor and character by refusing to enforce moral tests. A great office of the press is to collect, select, classify, and compress news. If it refuses to make pertinent, moral distinctions, it will the more readily refuse to make kindred intellectual ones; and the ill-ordered newspaper becomes a monstrous daily influx of undigested and half-worthless material, intolerable to the well-ordered mind. There is hardly a great daily of doubtful moral quality that does not have this chaotic character.

A still more direct trespass on private rights is the publication of scandal. If we put the case in the most favorable form for the press, granting that the injurious statements made public are strictly true, yet, if the facts involved are of a private character, their exposure still remains scandal. There is a very general sentiment which grants the press very exceptional rights in this matter. If one in private life deals in the faults of his neighbors, and dilates on their failures, we have sharp words of censure for this malicious gossip; but if he steps from the street to the house-top, and there, at the pitch of his power, makes the same ugly statements, we are ready with our excuses of the liberty of speech. The press is the modern house-top, and it is vociferous with those who proclaim scandal,—that is, private facts which are injurious to character.

Every man is entitled to his faults and foibles, so far as they do not directly affect the public interest; he is entitled to them as he is to the concealment of his personal deformities, or to the privacy of his home. To strip off these natural concealments in the name of virtue is to commit a double sin against the man and against the community. To plead this love of scandal, as if it were a love of virtue, is to add hypocrisy to transgression. Privacy is among the most primitive of rights. We will not allow a street-rough to fling open our own front door; but we take it very resignedly if the press throws open all the doors of our neighbor's house and invites a curious public to enter and to criticize, to gossip and to sneer, within its desecrated rooms. It is astonishing with what imperial powers a thoughtless young man is clothed the moment he mounts an editor's stool.

This exposure and criticism are felt to be quite just,—or, at least, a matter of course,—if the persons concerned are in any sense public characters, rulers, candidates, writers, preachers, actors, distinguished guests. The word *public* with us stands opposed not to private, but to insignificant. The English law has always made much of a man's house, as his castle; we are desecrating in many ways that personal privacy which is of far more value than the seclusion of the home.

Thus far we have assumed that the scandalous matter is true. This is a supposition in almost all cases far too favorable. The press is so eager for news, and its means of obtaining it in private affairs are so limited and uncertain, that an injurious report is usually either false, exaggerated, perverted, or misapplied. That which we should hold most sacred, — a good name, — we disregard thoughtlessly, and in a way wholly irremediable. No denial, no correction, can overtake a false report and undo its mischief. It cannot redress the wounded feelings, nor wholly assuage the suspicious temper, so injurious to virtue, which has been awakened in the public mind. Some of our public men have been tortured to the very limit of life by cruel, heedless scandal. When we add the consideration that the force of the newspaper press lies very much in sensational effects, and the fact that it is ever unwilling to be found in the wrong, we shall see the extreme and unredressed injury often done to private rights by uncalled-for publicity. Publicity in private matters is an affair of great interest to the persons involved, and it no more belongs to the press than to the private citizen to take the question unhesitatingly in hand. Responsibility at second hand in this matter of publicity is hardly a perceptible sentiment with us. A statement once made in any paper, no matter with what wrong, is regarded as fully before the public.

As long as the rules of good morals are overlooked, we shall hardly expect those of good taste to be regarded, yet these also involve the minor rights of men. The charge of vulgarity is often made against Americans. This vulgarity, so far as it is justly laid upon us, arises from a nettlesome sense of personal rights, asserting itself in offensive ways at unsuitable times, and from the importance we attach to unimportant personal matters and the publicity we love to give them. This publicity is vulgar, and the village paper is often the chief medium of this vulgarity. Printed gossip is no better, but worse rather, than street gossip. A press that will not allow personal trifles to occur without note is vulgar, and is as disagreeable as a wind that picks up and scatters the dust of the streets. It nourishes that love of notice which is the primitive root of vulgarity, and that occupation of the mind with trifles which makes action superficial. Just here is found, perhaps, the most serious evil which attends on the press; it not only brings trifling things to the surface, it brings our attention and our thoughts there also; and our lives become secular, local, trivial, like the events in which they are involved.

Perhaps there was never an age more dazzled and blinded by its own sheen,—less prophetic, less susceptible to the invisible, than our age. This fact expresses itself, with us especially, in our daily press. It creates, extends, and intensifies facts ; it multiplies headings and emblazons them with foolish alliterations, as if there were no every-day world, and events were always marching with us to the beat of drum. Much mud and dirt are cast up by these troublous waters, and peace, purity, and truth are often drowned in them.

So great a fact, so influential a force, and one so rapidly unfolded as that of our public press, requires time, and effort often renewed, before it can be fully adjusted to its work and yield the greatest good with the least injury. The passing years show a manifest gain in these particulars. The severe criticisms which Charles Dickens made on our press years since are to-day not applicable, or, at least, not applicable in the same degree or in the same places. The more recent and more moderate criticisms of Mr. Spencer show, however, that our papers still make somewhat of the same impression on a stranger. Only the refinement of deepening civilization will harmonize the many and subtile interests that are involved in the present rapid diffusion of intelligence. The immense service which the newspaper press renders, the unexampled vigor which it has shown in its work, its growing sense and pride of power, have served to make it headstrong and inattentive to private claims. If we compare the better portion of the press of England with the corresponding portion of our own press, the best dailies of New York with the same dailies thirty years ago or with the dailies of Chicago, we shall see that higher standards are arising and are slowly attained in this great field of effort. The very fact that American papers are, above others, enterprising in securing news has made them the more heedless of the rights involved in its publication. The newspaper will, in recognizing its power, discover also the laws of that power, and learn that it can by no means attain its true influence by quiet submission to the unguided impulses, worthy or unworthy, of the community to which it belongs. If it is to lead, it must lead, and not simply serve. Responsibility attaches at once to power. To crave scandal is bad enough ; to publish it is worse. We are jealous for the refinement of republican society; we do not believe that it is condemned to hopeless vulgarity. We are envious of the high praise bestowed by Mr. McCarthy on the English press in his *History of Our Own Times :* ‘ The English people have long learned to look to the newspaper press as not only the quickest, but, on the whole, the most accurate, means of intelligence in all matters of public interest."

"*THE NEW EDUCATION.*"

BY D. L. KIEHLE, A. M., ST. PAUL, MINN.

The subject of popular education is one which is occupying the attention of all civilized countries, and there is no institution of modern times which is held responsible for greater results. It is therefore of great advantage that they who do the work, and the people for whom it is done, should sustain the most confidential relations and cultivate perfect freedom in the discussion of methods and results. To do this with profit there should be a fair understanding of the actual condition of our schools, and of the theory of education which furnishes our ideal. It is the theory of our education we consider, that with an understanding of the situation we may decide whether our system is radically wrong and deserves overturning, or whether it is immature and defective, but promising well with sufficient care.

The civilization of an age comprehends all its social forces in their relation to each other and the world. It includes its religions, its intelligence, its literature, modes of communication and travel, its disposition and tendencies. Every civilization transmits itself,—introduces the new generation upon the stage which it is about leaving. If there has been a civilization that now may be called old, its education must be old. If, on the other hand, we have an education which we have a right to call new, it is only because our civilization is new. Taking a general survey of the past, we shall not fail to notice the one prominent characteristic of fixedness. The good was that which had been; relations must continue as they have been. The idea of development or growth to things new and better was wholly wanting. Hence he was wisest who knew most of the past; he was the best man who was most strict to custom and tradition of the past. The mind was a receptacle, the memory was the prominent and all-important faculty, and he was the best scholar who remembered most accurately and fully to the least jot and tittle the recorded wisdom of the past. Teachers taught facing eastward toward the authorities past. The result of such education was an absolute enslavement of the intellect in servile dependence upon authority. It made men distrust their own experience, and fear, as the whispering of evil spirits, the suggestions of their own judgments. Under this education China and India are where they were three thousand years ago. The spirit reigned in Jerusalem and followed our Christian civilization hundreds of years. Men feared to think and reason. When the priest warned Galileo against dangerous speculations concerning the solar system, he pointed his telescope toward Jupiter and his satellites and bade him look for himself, but he dared not; he feared the temptation of the evil one by such exposure of his faith.

It is quite impossible for us to conceive how dead is the life of such an age to all passing opportunities. Spain is the most marked example that has brought the old so near our own times. The world had learned from Harvey of the circulation of the blood one hundred and fifty years before Spain allowed it to be taught in her universities. When, in 1771, officials with some public spirit proposed to clean the streets of Madrid, the case was submitted to the physicians, who forbade it because, having looked through all their books, they could find no instances in the past in which their ancestors had allowed the streets to be cleaned, and what would result from the experiment they would not answer for.

In the fifteenth century began what may be justly recognized the dawn of new civilization. In it the human soul asserts its inalienable right to attain the full maturity of all its powers, and to exercise them without restraint in observing, in invention, in discovery, in questioning, testing, or verifying the wisdom of the teachers with a view to holding fast only to what is good. The spirit of the age is progress. Its view of life is that of a development to the millenium of the future. In its education, mind is not a receptacle nor memory its chief faculty, but a power to be developed,—its faculties to be all trained in harmony, and in Nature's orders.

If learning was the aim of the old education, culture is the characteristic of the new,—culture of the head, with the results of intelligence in the power of continuous attention, close and discriminating observation, sound reason and good judgment; the culture of the heart with the results of moral character, and the culture of the body with a view to its care, and its use in the pleasures and industries of life. The earliest provision made by the State for the culture of the youth is in kindergarten, the most complete embodiment of the principles of the New Education. In the common and elementary schools, the selection of studies, the arrangement of lessons, and the methods of instruction are determined from the standpoint of the learner's condition, considering what he can do and what he ought to do next. The fundamental doctrine of the New Education is that ideas, as of form, color, and sound, must come to the child's mind through his own senses, and cannot be gained by memorizing the words that are but the signs; that judgments of comparison or relation, as of cause and effect, are only made by the pupil's intelligently apprehending the conditions and circumstances with a view to a personal and independent judgment. Applied to school work, it requires that object-lessons be the basis of all ideas of number and properties of matter; that words have no use except to name and recall ideas stored in the mind from previous observation; that language be as complete and exact as the ideas and thoughts in store. Those subjects which are the instruments of the mind in retaining and communicating thought, as reading, writing, and numbers, should be so intelligently and thoroughly mastered by the pupil that their use will be as natural and as identical with himself as the use of his right hand. In language, it requires results in the more correct expression of the pupil's own ideas. In geography, it requires a knowledge of the leading facts of the distribution of land and water, the form of the earth, its relation to the sun as the source of light and heat, and then that the pupil be led to form his own judgment, or be aided in verifying the judgments of others, respecting the natural results of these conditions in the distribution of heat and cold, change of seasons, productions and industries of life.

Arithmetic in several of its processes is essential as the mind's instrument, but beyond these its value is wholly disciplinary, and no defence can be made for its continuance except for the purpose of training the power of reason. Applied to morals, the New Education decides that memorizing a moral precept does not establish it as a personal conviction in the character of the learner. Actions of moral beings have moral qualities, as a flower has the physical quality of fragrance; and the moral judgment of a child can only be cultivated by directing its attention to the act itself with a view to calling out his own judgment. The importance of this principle warrants that its application to home-training be noticed. Under the severe discipline and spirit of the old, the abitrary judgment and opinions of a conscientious parent were imposed upon the son for belief and practice to the entire neglect of such a presentation of questions, or courses of action, that would strengthen the boy's judgment, and would make the transition to independent action safe and natural. His early years pass in a moral servility, or in a spirit of insubordination, and when he leaves home with a weakness of character, and he often enters upon a recklessness of belief and practice which may astonish, but which may be easily explained.

Culture, then, in its true meaning, is the characteristic of the new education. What are its relations to learning? Culture is the measure of a man's ability to make his own whatever of good there is or has been in the world. The cultivated eye alone can see, the disciplined mind alone can make its own, the great thoughts that are treasured in literature. But more than this, genuine culture insures knowledge as a necessary result of the activity. The quick eye and the thoughtful mind will bring knowledge, as the life of the plant changes soil and moisture to its own flower and fruit.

How far, then, is our system of public schools under the influence of the New Education? It must be admitted that some of the dark shadows of the old are still resting upon us, and that we are doing many things only because we are held by the authority of ancient practice and the difficulties in the way of meeting the demands of the new. Of England the able writer of the article on Education in the *Cyclopædia Britannica* says: "The science of education is still far in advance of the art. Schoolmasters are still spending their best energies teaching subjects which have been universally condemned by educational reformers for the last two hundred years." In New England a county has been discovered which seemed to have escaped every influence of the age, and has been thoroughly advertised as a fair sample of the work of the schools of America. While I am satisfied that this criticism does not fairly apply to the schools of our thriving cities and to many schools of the country, it is not to be denied that there is far too much of rote-learning of useless matter without even the virtue of thoroughness. Grammar is learned with no knowledge how to use the language with correctness; geography is too often a compilation of details of useless names; arithmetic, a labored process of doing sums without intelligence or practical advantage; and natural science, like all the rest, is taught momentarily from text-books, without apparatus and experiment, and with an entire indifference to its legitimate results. To this level the work of teaching must gravitate in proportion as the ability and ambition of the teacher deteriorates. It is not just, however, to assume this as general or without remedy. In all our professional training, normal schools and institutes, the effort is to establish right views. The practical results of the schools have improved. The training comprehends more fully the range of the child's powers. The task of the kindergarten, industrial drawing, and in some cases the use of tools, the enlargement of laboratories, museums, and philosophical departments, from the kindergarten to the university, all prove that the culture of our school systems is adapting itself to the demands of the age, and is fitting its pupils for an intelligent apprenticeship in whatever industry their tastes may direct.

In estimating the results of our system of popular education, it must be remembered that it is but one of the educating agencies of this new civilization. It has sometimes received honors that have belonged to the family or a pure social sentiment. It has also been loaded with the responsibility of saving children already beyond the reach of home, church, or social sentiment. In the aggregate result it has had its share of influence.

There has never appeared the parallel of times so abundant in opportunities, so grand in its enterprises, in which men and women have found so much in life worth living for, and so intelligent and eager in its pursuit.

During the decade ending with the year in which Richard Grant White made his attack on the public schools of New York City, speaking of it as 'a school system which, according to the experience of a half-century, is a deterioration in purity of morals, in decency of life, in thrift, and in all that goes to make up a good citizen." During that decade, according to the special report of the police department, the arrests fell from 84,399 to 65,393. The present generation, filling all the positions of industry in government, in professions, in trade, and in the arts, are the product and bear the image and superscription of our public school influence.

Shall the opportunities of culture be provided by the State beyond what is understood to be an elementary education? Shall the view of Richard Grant White be adopted as the policy of the state, "Discontinue all but strictly elementary education, reading, writing, spelling, and practical rules in arithmetic; leave all else to parents"?

What is the State but we ourselves representing the people in every industry and department of life? and who are the children for whom this provision is made but our own children, who are to take our places. If culture were only refinement, if it belonged to the list of luxuries to be enjoyed as a pleasure, we should say, let those who are able provide it for their children, and leave us free to struggle for an existence. But if true culture is power, if the increase of it is a proportionate increase of opportunities and of effectiveness in accomplishing ends, as well as an increase of the pleasurableness of labor, then we must say that the only limitations are those of practicability. Does any one offer us better or equal opportunities for the higher training of our children? I know of none which do not at once discriminate by distinction of wealth or other circumstances which exclude the masses from all hope of attainment.

Then, too, the historical development has been from the higher downward. The first demand of the State was for comprehension, ability, and culture for the governing classes. Hence, universities, dotted Europe like great lights on mountain-tops, while the common people were immersed in darkness. As governing classes increased the demands of higher education increased, until now the way is open from every home for every boy and girl to the best universities and colleges in the land. (Practical advantages of higher education in these times.)

The wisdom of this plan is proven by the entire experience of our Christianity in extending our civilization among Pagan nations. Beyond all that is done in the elements, it always aims to establish schools for the highest culture of its converts. We have sent our money to establish colleges among the Turks, Syrians, the Egyptians, and now are among the negroes of the South, in spite of the cry that we are over-educating them,—that our benevolence should be limited to training them to trades and the vocations of an humble life; we have built great universities, and are teaching these despised blacks how to read Latin and Greek, higher mathematics, and the sciences. From these centers of intellectual power, men and women have gone out to teach and arouse their own people. The results show that while illiteracy at the South among the whites increased 28 per cent. from 1870 to 1880, among the negroes its increase was but 11⅛ per cent.; and in Tennessee, which has felt the influence of the great Vanderbilt University, its increase has been but 50 per cent. against 24 per cent. among the whites.

In the light of our history and experience, I ask whether any lover of his country can seriously question the wisdom of our fathers in making bountiful provision for the higher education of our youth, so far as their tastes, abilities, and circumstances may allow.

How far industrial education shall be carried, is a practical question to be decided by circumstances; but the training of youth to the particular habits and skill required by each of the multitude of arts and vocations of society is a departure not warranted by the principles of the New Education. The world is its own best workshop. I believe the disposition of the business-world is that, if our public schools will send to them young men and women with characters well established in integrity and moral principle, with habits of promptness, careful and accurate attention, skillful and systematic in the use of their powers of mind and body, they will see to their apprenticeship, and will promptly and successfully initiate those to their vocation. The only exception that is allowed to this rule is in the case of those who are for various reasons removed beyond the influence of society and its industries, such as the Indians, reform schools, and prisons. Here the State must provide trades.

If the disposition to provide trades for the poor is prompted by the spirit of benevolence, I suggest that the problem that is baffling the most observing is not how to help the masses to more remunerative industries, but how to teach them and dispose them to use their leisure time and the proceeds of their labor in ways that will make themselves and their families more comfortable and happy. It is proven by the history of nations and individuals that, with the ignorant, the increase of wealth and power is the increase of sensual pleasures and luxuries ending in enervation and decay. And to-day we witness the appalling spectacle of the common and laboring people wasting their substance in sensual indulgence, only to be increased by their prosperity. In this country the money expended by the laboring classes during the years past in drink and tobacco would have provided each family with a comfortable home.

The most serious defect of our work is, in my judgment, the inferior place given to ethical or moral culture. Without in the least introducing the church or its dogmas into the schools, yet in perfect harmony with the dictates of a fine Christianity, the moral perceptions, judgments, and tastes of children ought to be so trained that they will apprehend and incorporate in their practice those virtues which relate them to neighbor, parent, and society. As we watch the course of our river, we may see in places the current grown sluggish or still; here and there water standing in great and stagnant pools, sending up exhalations that burden the air with disease; here again receiving streams corrupt and filthy, and then, in its headlong torrents, destroying life and wealth, and we are tempted to pronounce it both deadly and dangerous. But, taking a broader view from some higher standpoint, we see that it is a noble stream, moving in a current which nothing can stay, increasing its own volume by receiving and purifying every tributary stream, — its banks teeming with fertility, its great bosom growing broader and broader, bearing the commerce of a continent, until it becomes one with the great ocean. So, in the current of our social life, there is much that is dangerous, and the wrecks of life may be seen everywhere, and our hearts grow heavy with alarm; but in the broader view its current is firmly set; the purifying and assimilating power of our Christianity, our free schools, our enterprise, is broadening and deepening the current, making it more and more beneficent, until, as we fondly hope, the shores shall disappear only when we become one in the brotherhood of man, in one nation and one language.

THE SUNDAY SCHOOL A TRUE NURSERY OF THE CHURCH.

BY ELIZABETH PORTER GOULD.

To make the Sunday-school the nursery of the church in reality, as well as in name, is the goal to which all organized efforts in that direction should tend; for, in work to this end, rightly conceived and executed, lie the best means in this age of directly perpetuating the facts and principles of Christianity to the greatest number of human beings.

The value of nursery-work grows parallel with the idea of man's innate capacity. The conception of an early guidance of the natural abilities in the right direction, by means of the loving care and wise knowledge of those who also know when and how to add the quickening power necessary to a larger development, reveals the nursery to be the very heart of mankind out of which proceed the issues of life. Friedrich Froebel knew this, and hence the secret of his power as an educator. His method of working, in its finest spiritual essence, is destined to enter even the organized Sunday-school work. The intimate and fruitful relations between an ideal nursery and its family and an ideal Sunday-school and its church are different in degree, not in kind. The principles of working are the same in both. In each, love is the keynote to the perfect harmony, and necessary freedom the stimulant to the highest work. Now the nursery, *par excellence*, holds over its members the joy of the privilege of belonging to, and growing up in, the bosom of family love and care.

Birthright into this nursery gives not only membership to the family, but promises a fuller, more active membership, in the course of time; and not until the birthright is sold does membership cease. In this true nursery the responsibility of being good, of becoming worthy and competent in time of sharing more intelligently the family privileges, is taught and felt from the very first consciousness of existence there. This individual responsibility, rightly conceded, gives a dignity and interest to childhood, which fact is, as yet, but imperfectly understood It is the needed stimulant to quicken to a deeper, larger living; for it opens the shortest way to true self-knowledge and self-respect, out of which grows the capacity for self-sacrifice. This steady growing up into the work and love of the family utterly excludes, for all so favored, the idea of being formally born into it at a later date. There follows only the freedom party to announce the conscious independence of manhood and of womanhood, proud to reassert the family name, and further the work to larger ends.

Now apply this meaning of a family nursery, *par excellence*, to a church Sunday-school, *par excellence*,—as this age is destined to see it become,—and the relations of a church to its Sunday-school become enlarged. All the members of the Sunday-school become the objects of its love and care, belonging to and growing up into its privileges, enjoying them in proportion to the power of assimilating its obligations. A sincere desire to learn the facts and follow the principles of the Christ-life, as revealed in the Holy Scriptures, gives birthright into the Sunday-school, and so membership to the church, with the promise of a fuller, more active membership, in the course of a larger development of all the faculties. Not until the birthright is sold does membership cease; and only the largest knowledge of a complex human nature ever justifies any judgment as to a birthright sold. This steady growing-up into the love and work of the church utterly excludes, for all so favored, the idea of being formally born into it at a later time. There follows only the great ingathering of the free sons and daughters, conscious of their freedom, who are proud to assume more intelligently the church name, and, with their growing knowledge, further its work to broader ends.

In the realization of this condition of things between a church and its Sunday-school,—and the time is surely coming when it is destined to be realized,—the communion seasons will become great family feasts, where even the weakest one in the nursery will be heartily welcomed. A sincere desire to come, faint even though it be, will be the only required wedding garment. The hearty invitation of the church to its great social gatherings, as now seen in the organized sociables and occasional festivals, will become augmented by the as hearty invitation to its more sacred feasts. A sincere invitation to share all the blessings will shut the door to *ignorant* discriminations. Such an invitation will be limited only by man's free will, not by his intellectual theories, as such, nor even by the depth of his spiritual life. The sun, in shining for all, invites all to share its blessings. There is the fact, no matter what be the scientific speculations or even the ignorance concerning it.

Therefore, in this new realization of things, it will become as heartless and cruel to withhold from any of the members of the Sunday-school an invitation to the communion feasts of the church, because of their incapacity to a full understanding or assimilating of them, as to withhold from the children of a nursery an invitation to the periodical Thanksgivings because of their incapacity of a full knowledge or enjoyment of them. Even the smiles of helpless infancy add a joy to such a home-feast, and fill the measure of happiness arising from a whole family reunion. Even the inability of a child's being present does not prevent an invitation for such a presence. Can a church, representing a larger home-feast, dare to do less for those under its love and protection? The very idea of exclusion is limiting and hardening in its tendencies to the sensitive soul; indeed, the natural heart, even the sin-stricken heart, is more susceptible to a large, sincere invitation than man is apt to think. Love is the great leveler. Experience teaches that the largest parental and broadest church love even awaken the greatest desire in the objects of their love to receive their refreshing blessings; and, as has been said, the awakened desire becomes the only necessary wedding garment. Therefore, the communion-table will be spread for all the members, the old and the young, the rich and the poor, the learned and the ignorant, to assimilate, to the capacity of each, the love of the Father as revealed in the life and death of the well-beloved Son. The early and gradual familiarity with these great feasts will become to the youngest and the most inexperienced a means of interest and of growth which no later formal introduction to them could equal. The educational influence, in the subtle realm of symbols, will become to the growing minds a means of questioning to a larger knowledge, which, in other conditions, might be fraught with irreverence, doubt, or darkness. The question of the little seven-year old girl, who, having witnessed the sacramental service, on reaching home asked her mother if she could "buy the bread that had Jesus Christ in it at the bake-house," will then be an impossibility.

Then there will be awakened a greater social feeling one for another, arising from that fullness of heart which desires that all the family should share the same blessings, and that largeness of nature that makes it practicable for them to do so; and so the harmonies of that love will be sounded which will eventually unite in His name all the nations of the globe. To hasten this grand consummation the missionary spirit will become stronger, and its work more effective.

The idea which is now becoming more and more realized, that the verity of facts, and not the illusion of speculation, is the only common basis of belief on which all of all grades can stand, leads many a thoughtful, congregational form of mind to the desirability of perpetuating down the ages the form of facts, as expressed in the Apostles' creed. The acceptance as a basis of belief of this form, which has ever been dear to the heart of all Christendom, would bring all accepting it into a closer fellowship with that large distinctive body of Christian believers found all over the world, who make it the verbal expression of their religious belief. There is a unity of letter or word which often precedes the unity of spirit. This is suggestive and inspiring.

As the knowledge and recital in unison of this creed becomes an educational necessity of the Sunday-school work, so a wise and subtle interpretation of its principles must become the teaching of the church. Thus the work of the church will take in and supplement the work of the Sunday school, while the same creed will find them.

Many years of self-sacrificing labor and hard experience have been necessary to bring the Sunday-school to its present systematized condition. Its demands now equal its growth. If it bears the name of the nursery,—a name so significant in this age,—it claims its privileges and desires its responsibilities. It insists upon having its full rights, the rights of the family to which it belongs. The exclusiveness of the churches in having so carefully closed their membership-doors to many who imbibed the teachings of their Sunday-schools, butwho, either through their youth, ignorance, or mental questioning, were unable to fully assent to the vernacular of their creeds, has been a formative, strengthening power,—necessary, perhaps, to create a distinctive name and method of working,—which, now that they are organized, makes it possible for them to extend a more loving, parental hospitality to all those who are able to enroll themselves under their educational, fostering care.

The time has now come for the broader thinking, which has been slowly permeating the churches, to vitalize itself into broader action. The platforms of the nineteenth-century Christian work must be larger and more complete than those of the centuries that have preceded it. The growing years bring the fuller revelations which need a larger expression.

The highest religious economy,—and especially that which follows this century, with its practical, scientific outlook,—has ever an eye to the best union of the practical with the theoretical, and is only content while laboring for it. The prophet's eye sees that a full acceptance theoretically of this comparative relation of a Sunday-school to a true nursery,—to which, in common language, reference is so often made,—must lead directly to its practical accomplishment if the best results are to be secured. It also sees that not until this full family relation is established can the Sunday-school fulfill the highest mission which this age demands of it. The working for this is all the more imperative when the expediency of having special Sunday-school work done at all is questioned by thoughtful minds.

TEACHING HISTORY.

BY J. M. GREENWOOD, KANSAS CITY, MO.

Rationally man connects himself with the past and the future. He reads from the pages of the historian, of rulers, statesmen, warriors, philosophers, poets, and painters; he sees humanity struggling in kingdoms, empires, and republics to attain greater freedom. But onward humanity hurries, — restless, impulsive, and irresistible. Governments rise and fall, — all swept away by this constant stream which pours forth an ever-increasing volume,—bearing on its bosom the life and death of nations. It stays not for the wreck of empires or the birth of kingdoms.

To the student, the central figure is man, — his genesis, life, motives, actions, destiny. This is History! As sublime as the theme is, in nearly all our schools and colleges it is pronounced a dull, insipid study. Evidently there are reasons for this state of things. The causes may exist in the manner and method of presentation by the instructors, or the text used may not be well adapted to the capacity of the learners. The object of this paper is to solve, in part, these difficulties.

Education as a science, and also as an art, is founded upon a correct interpretation of the human mind,—its laws, development, mode of growth, and methods of culture. Instruction never rises above the teacher's conception of the mind and its capabilities. The non-progressive teacher is stationary,—a paralyzed dummy! Completely hemmed in, he never attempts to pass beyond the self-imposed barriers. No terrapin was ever more carefully *housed* than he. On the other hand, the progressive teacher has a lofty ideal, which is ever becoming more perfect in intellectual grandeur and in the harmony of its proportions; to this he strives to take his pupils.

To secure clearness, the subject will be considered under the following sub-divisions:

1. *What is the object of teaching history?*
2. *What should be taught?*
3. *How should it be taught?*

I.

A distinguished author has said: "To understand a portion of the human race, is the object of history." Yes; and as that portion developed in time and space, it is also the object of the historian.

But we may add that history should be understood not only as evinced in the court, the halls of legislation, and on the battle-field, but as shadowed forth by the people themselves in every-day life,—in the street, at home,—their manner of living and mode of thought. As preliminary, a brief consideration of the development and growth of the intellect, the laws of its culture, and the order of studies to be pursued, will assist in deciding what position History should occupy in a system of education, and what faculties are exercised at each stage of the learner's progress.

Psychologically, the mind may be discussed under these divisions: The intellect, or knowing and reasoning faculties; the sensibility, or feeling; and the will, or the power of choice. Each has its place in the constitution of the mind, and requires its appropriate objects to induce proper activity. At first the child's mind is a blank; all his knowledge begins in experience, yet is not confined to experience. Let it be understood, however, that the infant, in a normal condition, possesses all the rudimentary powers or faculties of the mind, but these are not called into exercise before the appropriate conditions, both objectively and subjectively, are fulfilled. In the development of mind the faculties first exercised are the Presentative, next the Representative, and lastly the Reasoning faculties; but it does not follow that each group is developed singly. What is meant is, that in early life the Presentative are the most active; then, at a more advanced age, the Representative; and, lastly, Reason, being supplied with proper data, is in the ascendancy. Having established the order of intellectual development, the next question to be determined is, What kind of knowledge is required to give the necessary development?—or, more specifically, what kind of History is appropriate at any stage of the learner's progress?

The united experiences of educators in Europe and in America agree that, in early life, objective and material studies should chiefly occupy the attention of the child, and that a retentive memory should be sedulously cultivated. Imagination, too, must be properly guided; and since the acquisition and classification of knowledge necessitates thought, the logical faculties are furnished with material for reflection from daily experience. The study of History involves thought, and also the attendant of thought-language to communicate thought; hence the primary object of History is to teach the pupil to understand the life and doings of humanity, as enacted in ages past, and to prepare him for life and the duties of citizenship for the future. Intelligent citizenship is, therefore, the object of historical instruction in our common schools. This requirement is a demand of the age and times in which we live There are duties the citizen owes to his country, to self, to humanity, and to God, and the performance of which requires the highest exercise of intelligence; consequently, the history of our country is one of the branches by common consent taught in all our schools. There is need that this should be so. For most unwillingly do we read of "put-up-jobs," bribery, rascality, and corruption in high places as well as low. As in the days of contaminated Rome, when ruled by the Pretorian Guards, men in some instances gain position by the aid of most ignoble means.

In some localities the services of the "repeating voter" and the "ballot-box tinkerer" are in active demand. And these are not all; there are men, acting under the sanctity of an oath, whose consciences are aided to duty through the potent influence of the weighty dollar. Were criminality found only among the low and ignorant, the remedy would lie in a general diffusion of knowledge; but it stalks into high places, and oftentimes assumes the air of innocence. Public morals may become debauched, a nation corroded at heart, the external life fair and imposing; but the internal, hollow and deceptive.

Turn to the Tenth Census Report, and contemplate for a moment the illiteracy of our country. Four millions of illiterate adults, and two millions of these are voters, nearly equally divided between the white and colored races,—twenty per cent. of the entire voting-population of our country! With this mass of ignorance, influenced largely by the lowest motives employed by wily politicians, it is not difficult to decide why the ballot-box is not pure and sacred in our national, state, and municipal elections. It is not assumed that all these men can be bought and sold, delivered, and voted, at the dictation of ward-bummers; but that many of them are, is a proposition too evident to admit of denial. Conscientious men do not act thus; for the man who acts in accordance with his convictions of right commands respect, and of such stuff heroes and martyrs are made.

The boy, by studying the history of his country, is made to feel that he has an interest in his native land; that its welfare is his, and that it is for him. Noble and patriotic sentiments are inspired in his young breast, and, as he becomes more familiar with the institutions of his country, he learns to love and respect them. The love of country is inborn, although for a time it may appear to be utterly rooted out, yet it survives in spite of boasted threats and bitter denunciations. No difference whether he be an exiled Roman, sitting amid the desolation of a once proud and opulent city, or an American, who has imposed self-expatriation,—the love of country still exists.

"I have no country!" the most terrible words ever uttered by man. Gladly would Arnold and Burr have blotted out all love of country, but *it would not.*

To guide this love, to keep it pure and holy in the hearts of the young, is the duty of the teacher. This is not partisan politics,—it is pure patriotism.

II.

To give a satisfactory answer to "What should be taught?" is not to be expected; but it is confidently believed that such suggestions may be offered as will assist in throwing much light on this subject.

As a prerequisite the teacher ought to be familiar with the subject as presented in the text-books, and also with the history of contemporaneous nations. The history of the United States is closely connected with England, France, Holland, and Spain. The idea should be dismissed at once that "*history*" is "done up" in packages and labeled "Disconnected," to be taken in pure *un*adulterated dates. Not an atom in the universe is isolated, and much less are facts isolated in the progress of civilization. Universal laws govern the birth and death of nations with as much certainty as that of individuals. Isolation is nowhere found in the realms of mind or matter.

Among the more important topics embraced in the history of the United States is the appended list, designed to serve as a guide in amplifying the course to be followed by the teacher. History has its epochs, and those are strongly marked in the development of our country. The first remarkable epoch is that of the "Mound Builders" prior to 1492; the next remarkable epoch is that of Discoveries and Explorations. The discoveries made by Spain, England, France, and Holland, from 1492 to 1607, should be sharply defined, and the claims of each thoroughly understood. The relations of these countries to one another require special attention, and the motives by which they were actuated must not be omitted. Unless contemporaneous history be well understood and explained by the teacher, the history of this country appears only as accidental happenings, without order or system. Time, place, and the causes of events,—these elements united in thought, make the distinctive characteristics of history in the concrete.

Growing out of the Discoveries and Explorations is the Period of Settlements, which dates from 1607 to 1732. This is, in some respects, a more interesting period to the student of American history than the preceding. In teaching, the points to be kept prominently in view are: Why did the settlers come to this place or go to that one? What political, social, religious, and educational opinions did they represent? What were their habits of thought, manner of living, and mode of dress? Did they come to this country with all the passions and prejudices of the old world, or had oppression driven them from country and from home? By what authority did each colony acquire a title to the land? How was it obtained by the settlers? With whom was the law-making power vested, and how were the laws enforced? What influences caused the colonists to unite their military forces in times of danger? What treatment did the colonists receive from the Royal Governors? How were the colonists effected by the wars between England, France, and Spain? In what respects did these wars prepare the colonies for the revolutionary struggle? The next remarkable epoch is the Revolution and its immediate causes, which may be considered as extending from 1763 to 1789. The causes of this war should receive special attention, and candor compels the teacher to make an impartial statement of all the facts touching this subject.

Under the division, *Why the war?* may be enumerated,—that the colonists wished to be treated as Englishmen, professing loyalty to the British crown; the occupation of Boston by British soldiers, and their insolence to the citizens; the rejection of the petitions sent to the ministry and to Parliament; and, finally, the appeal to arms. Battles that followed are to be studied as effects, not causes. The assembling of the *Continental Congress*, and the provisions enacted to organize, equip, and support the army; the Declaration of Independence,—its influence at home and abroad; the campaigns and the strategic positions occupied by the opposing forces,—the battles and their results; treaties with foreign nations, and the benefits derived therefrom; how the armies were maintained in the field; the trials and privations of armies, and also of the citizens; the depreciation of the currency and the destruction of commerce; all these should be thoroughly studied and well understood. It is necessary, also, to mention the condition of the colonies at the close of the war and until the adoption of the Federal Constitution, as one of the most interesting and critical periods of our national history.

In taking up the Political History, the following important topics are suggested, to wit: the adoption of the Constitution, and the noted events of each administration, including the growth of States and the acquisition of territory; the rise and progress of political parties and the ideas represented by them; discoveries in science and the arts, and their applications for the amelioration of society, and especially the application of steam as a motor force; improvements in mechanical and agricultural implements, and the manufacture of textile and other fabrics; rapid advancement in modes of travel,—also postal and telegraphic communication; *the wonderful progress of the common-school system and higher academic-instruction*, and the general diffusion of knowledge as exhibited in the multiplication of books and the universality of newspapers and periodicals.

The late war was an educator. The Constitution was studied by all classes as it had never been before. As the armies advanced or retreated, the lines of march were scanned by millions of eyes. The war was the efficient cause in popularizing "civil government" in the common schools. Educators saw the need, and it was speedily supplied with popular and attractive text-books; and what was once considered as belonging exclusively to the statesman or jurist became, in a single decade, a branch of study along with Geography and History.

The fundamental law of the land should be as familiar to the teacher as the subjects of Percentage and Proportion. The three co-ordinate branches of government,—Legislative, Executive, and Judicial,—the triune in unity,—are independent of each other, and yet dependent. To preserve this equilibrium is the imperative duty of the people, and it can only be preserved and transmitted by adhering strictly to the Constitution.

Everything exists in obedience to law, and even all in authority must be governed by the law, and, if needs be, condemned by the law. Were I asked to mention the most important topic for the benefit of the pupil in studying the History of the United States, my answer would be, "Obedience to the Constitution and the Laws of the Country."

A late work on General History contains the following excellent questions, which may be multiplied or abridged to suit any class of pupils:

1. Who were the Egyptians, Greeks, Persians, Hebrews, Latins, Spaniards, English, etc.? What did each of those nations contribute to the common stock of civilization?
2. In what forms did the mind of the race express itself,—in religion, war, law-making, political organization, literature, and art?
3. What was the actual life of the people themselves?

These queries are suggestive, and indicate, partly, the course to be pursued by the instructor. Capital points are to be mapped out, and the outlines drawn with a bold and steady hand. Before dismissing this division of the subject, it is deemed advisable to present such a classification of historical reading as the advancement of the pupils demands.

1. Children are charmingly entertained by listening to interesting biographical sketches, incidents of travel, hair-breadth escapes, encounters with wild animals or still wilder men, whaling expeditions, manners and customs of civilized and uncivilized races, and particularly children's lives among all nations. Whatever is communicated in this manner is more firmly fixed in the mind if it be reproduced by the individual members of the class in written narratives; or, in the absence of a written account, verbal repetition will help fix some of the facts in the memory

2. The next grade of History, well adapted to the children of the lower classes in our schools, is that of historical characters, including the *time* and *place* their deeds were performed, and the right or wrong involved in their occurrence. Thus history may become a fruitful source of moral instruction, enlightening the judgment, correcting the understanding, and elevating the soul.

3. Rising higher in the plane of intellectual activity, the pupil's horizon expands sufficiently to discuss with profit, nations and their doings; rulers, their conquests and usurpations; the people themselves, their modes of thought, civil and religious opinions, and general intelligence; also wars, including campaigns, battles, and sieges; the rise, progress, decline, and fall of nations.

Deductions drawn from the right and wrong of each action are to be encouraged for the reasons mentioned in the preceding paragraph, and also for giving a more comprehensive view of the motives governing individuals and nations.

4. Philosophy of History is to think of civilized humanity as unity. Age follows age; nations rise and fall; new blood and new elements infuse a new life; the drama is not finished with one set of actors, but moves onward in an unbroken procession,—the brilliant episodes in the evolution of humanity. This wider sweep,—this grasping the prevailing idea of a nation, — to unify the various manifestations of thought, and to interpret them as the unfolding of gigantic intellectual forces, are truths only reached by the boldest and most profound speculations of the human mind. The unity of history, as the biography of man, is the crowning point in the highest form of intelligent thought. Beyond the reach of the multitude it lies; yet those standing on the heights point the way to it. The artistic teacher who gathers all his forces, and arranges them in logical groups, grasps the true spirit of history as the unfolding and fulfillment of human destiny.

III.

The chief reason History is so unpopular in many schools is owing to the manner in which it is taught. All the soul is taken out of it. It is a lifeless trunk. A few disjointed, ill-shapen, and ill-fitting facts are strung together and called a "History"; and the repeating these verbatim is called a "History Recitation."

There are two principal avenues to the mind, — the eye and the ear, — and in teaching, these are employed. History, then, must be presented objectively to the eye,—its leading facts need to be grouped and spread before the pupil's eye on chart, paper, or blackboard, and then talked about till they are thoroughly mastered. Through the eye the understanding is reached, and effectively, too; and besides, the habit of classification, — one of the chief benefits derived from the pursuit of any branch of study, — is stimulated to a healthy activity in the arrangement of facts, their causes and consequences. To facilitate the teaching of History, charts should be used which show at a glance the leading events of any particular period and in what countries, the nations effected being represented by different colors so as to trace their history with less difficulty. By reference to the chart, a moment only is necessary to determine whether, at a certain date, a nation was progressing or receding in political importance.

The lesson must be definite in length, commencing at a certain paragraph and closing with as much precision. Additional information, either by teacher or pupil, from all available sources, should be gathered and brought to every recitation. These strong side-lights illumine dark points, and render the lessons more pleasing and interesting; it also encourages excursions into new fields of thought.

We will now assume that the lesson is ready at the appointed time, and the class is called by signals to the board to recite. For convenience the class is divided into three or more sections, numbered as sections 1, 2, 3, etc. Section 1 may draw a map of the country, and indicate the localities mentioned in the lesson; Section 2 may write exhaustive analyses of the lesson on the board; Section 3 may prepare a condensed view of previous lessons; Section 4 may arrange outside information that bears directly on the present lesson; Section 5 may fill up the large map which has been prepared, as follows: Draw a large outline map, having on it only the coast-lines, the parallels and meridians. As the class advances, one or two members can fill in the details each day. At first this map is a blank, and only so much is added to it daily as occurs in the lesson. The map grows with the progress of the class. Colored crayon, in making this map, is recommended; or, if it be made on paper or prepared cloth, different inks will show the coloring with good effect. Two-fifths of the recitation should be devoted to the written work, and the work should so alternate that no pupil does the same kind of work two successive recitations. Every member of the class must do some kind of work during each recitation.

During the remaining portion of the recitation the work should be oral. *Undivided attention* is the first condition of recitation; and the second, each member of the class is held personally responsible to commence or to continue at any stage of the recitation when called upon by the teacher. Pupils will use their own language; express their thoughts in a pleasant, agreeable tone of voice, and endeavor to use the language correctly. Boys frequently say what they do not intend, and stammer and hesitate for words to express their ideas. To remedy this defect in expression, they should be permitted to try till they tell all there is to be said. The common practice of excusing as soon as a mistake is made cannot be too severely censured. Two extremes are to be studiously avoided,—(1) the incessant clatter of the teacher; (2) a few good pupils doing the reciting for the class. A proper distribution of work is a golden maxim in the school-room. Corrections in spelling, capitals, punctuation, pronunciation, language, and all the material facts of the lesson, ought to be made by the class. A healthy spirit of criticism is a powerful incentive to correct scholarship and accuracy in every respect.

A few words on grouping capital points in history may not be devoid of interest. As an illustration, suppose the Sixteenth Century is chosen. It is preëminently a century of storms and convulsions,—political, ecclesiastical, and intellectual. They burst with tornado-violence upon the nations of Europe,—uprooting, overturning, and tearing down old institutions. It was the releasing of gigantic forces destined to change the current of human events. France, England, Spain, and Germany stood confronting each other at the beginning of this century. Three young and ambitious monarchs had ascended thrones,—Francis the I. of France, Henry the VIII. of England, and Charles the V., King of Spain and Emperor of Germany. Each was bold, daring, unscrupulous, energetic, and ambitious. Recent discoveries,—the inventions of printing and gunpowder,—coupled with the explorations on the Western Continent, had aroused the minds of the people to bold investigation and independent inquiry. Such men as leaders and the feverish imagination of the people, betokened great social and political convulsions.

During this lowering period Luther's pen and voice shocked, then fired, the religious world. His thunder at the Vatican soon found expression on the battle-field. Never before in the world's history had the human mind attempted to assert its own freedom. Emerging from the long night of intellectual gloom is the triune galaxy of great men, — Kepler, Copernicus, and Galileo. From this starting point the student may plunge backward into the ignorance and impenetrable gloom of the dark ages, or go forward, keeping pace with the tide of civilization. It is unnecessary to multiply illustrations. The teacher can select them.

Reviewing and summarizing, we have these conclusions :

(*a*) The primary objects are : a noble manhood ; a preparation for the duties and the responsibilities of citizenship ; to obtain liberal and comprehensive views of humanity as manifested in the lives of nations ; and to unite in thought the distinguishing characteristics of the race as the philosophy of civilization.

(*b*) Under "What should be taught ?" may be included the leading events,—their occurrence, *time*, *place*, *cause*, and *effect ;* their influence, direct and reverse, as affecting or ameliorating the condition of mankind.

(*c*) The teacher must be able to manage the recitations so as to secure the maximum of work in the minimum of time, and to know that every principle is thoroughly comprehended by all members of the class, and that a spirit of enthusiasm is awakened in the minds of the pupils that will stimulate them to continued exertion in the higher departments of historical research.

WOMAN: HER MORAL AND POLITICAL INFLUENCE.

Part of an Address delivered before the Royal Academy of Moral and Political Sciences (Madrid, October 15, 1882), by Hon. Sr.. Viscount de Campo-Grande at his public reception. Translated by Mrs. Thomas Nickerson.

I am aware that in the announcement of this theme I expose myself to the criticism of both classes of my audience,—to that of the men who will think it very simple, all believing themselves judges in the matter; and that of the more immediately interested party, who have a general presentiment that they will never be understood by us. I will try to meet the first in a cheerful manner and an undaunted spirit; and I will try to demonstrate the error of the second, because, with all its inconveniences, this subject has one great advantage,—it requires no special studies. Our earliest memories will aid us, and assuredly no man of mature age needs to study the object that he has been studying with affection and tenderness nearly all his life-time. Some twenty years ago, being in the Cathedral of Mayence, I visited the tomb of the Canon Henry of Meissen, who died in 1317, and who, having dedicated all his life, as a troubadour, to singing the excellences of woman, won the name of Frauenlob, a name which gratitude and fame perpetuate. In 1843 a statue was erected to his memory by subscription, to which all the German women contributed. I confess an attempt to become the Spanish Frauenlob, not by singing the excellences of women, but by explaining the justice we owe them.

I must designate my limits in so vast a theme, and accordingly I shall confine my thoughts to the rational and judicial condition of woman, and the diversity of her functions as realized and demonstrated by her talents and her capabilities for education and work. I will afterwards tell you what is my conception of her moral and political influence, and I will close by indicating the reforms to which she has a right in our civil, penal, and administrative laws.

There are two problems which it would be useless to ignore, because they present themselves as necessities, and, therefore, it is proper to discuss them,—the right of women to education, and the right of women to work.

As we have indicated, antiquity offers isolated cases of the instruction of women; they were nevertheless exceptions, and on this account have been more celebrated. In remote times it was pretended that Aspasia taught philosophy to Socrates, and politics to Pericles.

It is said of Eloisa that at a very early age she knew the ancient languages and philosophy and the sciences of theology, although most assuredly she did not love them as she loved Abelard.

In our own country, in the fifteenth century, besides the great Qûeen who founded libraries and gave free access to the books in her dominions, we glory in Beatrice Galindo and the doctress, Isabel Losa. There were also elevated to the doctorship in the sixteenth century Teresa de Jesus (whose fame is recognized even in our day by the Christian world), Isabel of Cordova, Louisa Medrano, who was a professor in Salamanca as Francesca Lebriju was in Alicata. Isabel Foya was permitted to preach in the Cathedral at Barcelona, notwithstanding the advice of St. Paul "that the women keep silence in the churches." Isadore of Guzman and Lacenda in the seventeenth century taught as a doctress in the University of Alicata; and in our own days the names of Cecilia Bohl and of Gertrude Avellareda magnify the glory of their sex. Notwithstanding these cases, the majority of the women remain in great ignorance, and in the last century their education was confined to lessons at home, but few colleges being accessible to them, and those only on religious foundations.

The good King Charles commenced to agitate this question. Let us hear his contemporary, Peter Alonzo Rodrigo, in his report of the public schools for girls and boys: "The *Supreme Council* had taken the most honorable measures in educational matters in view of the surprising progress made in a free school for the teaching of poor girls, established and carried forward with the approbation of the same council, in the suburb of Mira el Rio, and his majesty decreed, March 7, 1783, that it appeared fitting to him to have established in the schools in Madrid the same rules, in order to constitute the women who devoted themselves to the work of teaching these girls a respectable class, who may be able to inspire in their scholars good maxims at the same time that they were instructing them in the duties proper for their sex." The king deigned to approve this regulation in view of the decree given in Aronjuez on the 11th of May of the same year (1783), and in consequence of which they established thirty-two free schools in Madrid: the principal object of this very commendable institution being to encourage through all the provinces of the kingdom the good education of all the girls and young women in the rudiments of the Catholic faith, in the rules of good works, in the excellence of the virtues, and in the labors proper for their sex, to which, as a consequence, must follow the best customs and dexterity in their labors and the better government of their houses.

Besides these schools there are in Madrid the two royal colleges of education and work for noble orphan girls, named for Loreta and Santa Isabel, and those of San Antonio, of Leganés, of Monterey, and of "*Nuestra Senora de la Paz*," and some special teachers, honorable women, who receive and teach girls of distinguished families. Lastly, the Royal Society has founded four schools for girls, called the St. Ginés, the St. Sebastian, the St. Martin, and the St. Andrew which are under the immediate direction of the board of ladies of honor and merit of the same Royal Society; also three other schools have been established with distinct objects,—in the Buen Retiro, in Segovia street, and in Bordadores street, in which is taught all kinds of fancy needlework, manufacture of artificial flowers, etc., by which means they may be able to obtain a respectable livelihood. "This description pertains to the later years of the last century, when to the congregation of St. Casiano, which directed the earliest educational interest in Madrid, had succeeded the "Academic College of Art and Letters," whose scholars having arrived at the magistracy, enjoyed, through the decree of Charles IV. in 1790, the privileges of the nobility, among which was exemption from military service.

As a consequence of these happy circumstances, in the census of 1797 there were in all Spain 50 colleges for girls, with 2,745 pupils, and 2,303 public schools for girls, with 88,513 scholars, and 700 more gathered in the convents.

There were those who received instruction in their own houses. The public schools increased but slowly, and their number had scarcely doubled until the law of 1859 (which was due to a worthy individual of this Academy), ordering that there must be at least one school for girls in every town of five hundred inhabitants. From that time the progress was all that could be desired, as can be seen by the reports published every five years.

And, beginning with the normal schools for female teachers, it should be noticed that the school of Madrid has a central character; it was officially started in 1858, uniting itself for practical study with the old Lancastrian school, acting under the patronage and direction of the committee of ladies of honor and merit. Voluntarily twenty-nine provincial deputations have established three schools, affording a total matriculation of 3,099 alumnæ, including that of Madrid, which has 306; that of Barcelona, the largest, which has 307; and that of Pamplona, the oldest, established in 1847. The latest statistics of the central officials upon the education of girls are of date December 31, 1879, and demonstrate a great development. The *public schools* (exclusively for girls) show a total of 6,373; those of the same kind for boys, 4,493; the private schools for the girls, 2,379; and the mixed schools, a total of 292,—that is to say, 13,537 centers of instruction or schools of different grades. The number of pupils at the close of the past century, as has been seen, 88,513 in the public schools, without giving the statistics of the private schools, rose in 1870 to 446,610 in the primaries, and 103,997 in the second grade, being a total of 550,607.

Lastly, the teachers in 1870 were 6,288, with 688 auxiliaries, in public schools, and 2,742, with 482 auxiliaries, in the private schools,—that is to say, a total of 10,180 female teachers, of which 1,222 are of the highest grade, and 6,602 of the elementary grade, and the rest without degrees. In the foregoing number were included the schools sustained by religious ladies, of which 124 have a public character, and are provided with 291 female teachers and teach 11,830 pupils; and 242 of a private character, with 568 teachers, teaching 21,710 pupils. Therefore, in 1870, the wishes of Larruga were fulfilled in which he had expressed the desire that the nuns should dedicate themselves to the public instruction, as also the precepts of the concordat of 1851. Primary instruction is carried on with us in such a charitable spirit that the pupils of 297,654 of the public and 15,853 of the private schools receive it gratuitously,—*i. e.*, more than half of the number taught.

INSTRUCTION AND WORK.

But neither are the first rudiments of education or instruction enough for woman. She must have something more for the exercise of her natural abilities; her nature demands something more. She who has wealth may aid society with intellectual labor; others who have not may help by the labor of the hands,—thus may they all advance the progress of civilization, which consists in the right application and improvement of the natural forces. To that the simple work-woman may contribute as well as the scholarly and studious, the learned and judicious, who abound among us.

Her duties call her not to the battle. Military art, the bar, the political tribune, everything, in short, which brings her in contact with the multitude *hardens* the affections, impairs her delicacy of manner, and is undesirable for her. But the study of religion and of morals, in order to elevate herself to God and to regulate her life; philosophy, which will teach her to know her own self; geography and natural history, which describes the world that we inhabit; chemistry, which tells her how matter works; logic, which explains the operations of the mind; classical literature and the arts in all their extension, which conduct her soul to the good by means of the beautiful; the languages, dead and living, which enable her to have communion with all who have lived; history, sacred and profane, which, besides drawing back the veil from the past, fortifies her virtues and her love of humanity and of her own country; medicine and hygiene, which fit her to care for her own health and the health of those she loves; economy, social and political, which interests her in whatever agitates the heart of her country;—all these things can be comprehended by her, and all ought to be understood, especially by her whose position does not require a definite career or office, although all ought to aim to attain the greatest amount of knowledge possible.

Moreover, education is a safeguard for innocence. The innocent woman always shows the greatest serenity of spirit. The exaggerated expression, "sainted ignorance," has always been productive of evil; and Fenélon has said, with truth, that she who is ignorant, or has no education, cannot occupy herself innocently. I am, therefore, of the opinion that while there are no special institutions for the higher education of women, conducted by themselves, examination and matriculation ought to be permitted the in universities, the girls studying, however, by themselves, so that they shall not clash with our customs,—taking certain precautions, as has been done in the Institution of Valencia, so that in the recitations the young lady student can see the professor without seeing or being seen by the young men.

With respect to the professions that now require academic degrees, up to the present they have only desired to practice medicine. Of 63 graduates in 1872 in the University of Zurich, 51 studied medicine, being nearly all Russian ladies. In the United States, at Vassar College, in the State of New York, there are many who study medicine, and there are in those States 523 female practitioners In Berlin there are clinics especially for women, but it is not thought best to confide to women difficult cases of surgery, which require muscular force and strength of nerve. In Sweden and Denmark they can attain to all the academic grades except theology; since 1879 they are admitted to the universities of London and Cambridge. Among us they can enroll themselves in the institutes, but with respect to the universities it was determined recently that they would only graduate those who were enrolled at that date. This number was small, and nearly all studied medicine with fair success, confining their practice chiefly to women and children. Pharmacy is an open door for educated women, they being peculiarly adapted by nature for this by their exactness and method.

Excellent results are found in the National School of Music and Declamation. A select nursery for boys and girls was also started in 1830 by the benevolence and artistic enthusiasm of the Queen Doña Maria Cristina of Borbon, whose name it bore, and it would be just to restore it.

Public administration ought also to allot more work for women. The sale of tickets for theatres, concerts, etc., the distribution of lottery tickets, the sale of postage and revenue stamps, and coats-of-arms, for instance, which has already commenced here. These should be exclusively hers; she should have a part in the work of libraries, archives, museums, post-offices, and telegraphs; indeed, in this last mentioned it has been proved that she can alternate with her husband as a telegraph operator.

To be a saleswoman in the wholesale and retail stores is an avenue of profitable employment not to be overlooked, and if ladies would determine to buy only where they are employed it would be an important help; and at the same time they could, with the energy and constancy that such a great exigency requires, condemn working in stores on Sundays, and they could not fail of a great success; and not alone in buying and selling, but in other commercial operations. They ought to be able to avail themselves of the studies that the young men take in the free commercial colleges. Certain industries requiring minuteness and patience, such as watch-making and printing, might be performed by them successfully and profitably. Railroad companies might give up to them entirely the sale of tickets, as some of them have begun to do. In respect to the ordinary occupations of life the preference should be given to work in families, or in small groups, in order to escape the demoralization of the workshop or office; and it would be desirable that the city work-woman of Möll hausen might have examples in Spain, where isolated work produces such good results, as is also demonstrated by the making of silk in Valencia, and the cultivation of saffron, with which the fields of Moncha furnish her a dowry; and thus she is not without employment, Señor Larruga has been unjust, especially with the daughters of Madrid, when, in his already cited work, he says they have not afforded during the past century any evidence of application to industrial works; but, on the other hand, it should be said that nothing has been offered them to do.

To-day everything is changed; the miserly industry of producing cheap things calls the woman to the manufactory. Let her still remain as much as she can in work more isolated, and in every case let her be inspired by frugality, which the discovery of the sewing-machine must have taught her, because only the savings-bank book can hinder her going to the pawn-brokers.

I am sorry to say it, but recent official statistics are so difficult to obtain in our country, particularly in reference to this subject, that we have no aid whatever, although we have solicited it earnestly. With respect to the occupation of women in Spain, I must refer to those already published, compiled for December 31, 1860; Nuns, 18,817; teachers and assistants, 7,789; graduates cf schools, 434,478; servants, 416,511; industrial class, 54,455; artisans, 114,199; women in cigar factories, 54,469.

One-half of the women married to farmers and tenants of lands aid their husbands in the work of the fields besides their domestic labors, and the industry, the economy, and the assiduity and skill of the Spanish woman can easily be seen. In the said statistics the differences are more noticeable, the number of beggar women at that date being double that of the men,—that is 178,934; the mutes and blind one-third less than the men,—mutes 4,559, blind 25,141; those in lunatic asylums 755,—that is, about half as many as men; and the suicides during that year amongst the women amounted to 70,—again the number being half as large as amongst the men,—yet this class of insanity increases every day. The increase of population is the same in both sexes, though a small fraction in excess is always found on the part of the women. In 1860, with a total population of 15,673,481, there were 7,907,973 women; in 1877, in a total population of 16,731,570 there were 8,486,592 women.

MORAL INFLUENCE.

Writers, both ancient and modern, attending to but one side of the question, have believed that we are entirely the children of education, thus indirectly denying reason and conscience. A Spanish writer, who is noted for his keen satire, has demonstrated that such a doctrine debases us to the monkey of the Italian.

Reason and conscience are elements of the human soul, but education illumines conscience and enriches reason. Education, then, is not all, but it is much; and education is the work of the mother, as becomes evident from the fact that we find always a great woman the mother of a great man; nor could it be otherwise, for the influence of woman is ever exerted over the man, — first in the person of the mother, then constantly exercised by the wife, and lastly by the sweet imperiousness of the daughter. Nor is this her only influence, for as she was felt in her own home, so is she in the home of her husband, in the circle of new found friends, and in her new relationships. What a grand mission when rightly apprehended, especially if it be fulfilled in love and tenderness!

Regarding the equality of the sexes as generally admitted, let us look for a moment at woman as the mother, in the exercise of her special duties. After furnishing the physical aliment to her children as nature dictates, begins the moral food, awakening their perperception of language, teaching them to join the word to the budding idea, and with the idea thoughts of prayer, and of the whole world, and even of heaven itself, — for the teaching which does not develop itself in religion is as a poetic ballad lost among the distractions of existence. All this belongs to the mother, but the father must aid her; for although the prayer which we learn at the mother's knee may console us in adversity, that which we learn of our father will strengthen the conscience.

Napoleon I. said, however, "the world is woman's, for the future always is the mother's." Only a few days since an illustrious professor demonstrated it practically to me (he may be one of my listeners at this time); with tremulous accents he said to me: "Whenever I read or write, I think of my mother opening a path for me through the snow that I might go to the church of the town where the school was kept." Nothing can eradicate from his heart the memory of that mother in her self-sacrificing devotion to her boy, of that school to which she conducted him, or of that church whose doctrines she taught him.

After the moral comes the intellectual food. Let the mother, as far as possible, be the teacher of her daughters, for the teacher and college are but sorry substitutes for her loving instructions. Let the mothers also aid their sons in their intellectual pursuits, since it has often been seen that after a few months of vigilant attention to their children's studies, they have caused doors to open to careers which would otherwise be unattainable.

"The unconscious grace of childhood" which beautifies everything; the cultivation of the taste for the beautiful; the aspiration for the noble and good,—this is the work of the mother, by her gentle ministrations; and if all this is not enrolled in the catalogue of the virtues, it is included at least in the catalogue of the honors. "Surely the body is not worthy of adoration, and must return to the dust; but in the mean time must we not care for it?" said with much simplicity a young woman of the Abate Mousse. Young girls ought also to learn from their mothers all about domestic duties.

Those who say that sewing and embroidery are useless because the cost is more than the purchase-price of articles already finished, do not take into account the benefits of material work for the quieting of the mind.

"Work is the natural law of humanity," as has been said within a few weeks by our monarch himself; and if anything might be added to this assertion, I might venture to say that work is the only human happiness, and the antidote of *ennui*, that moral consumption which undermines, at the same time, the life of the individual and the happiness of the home.

How woman manages her domestic affairs, often by the work of her own hands, securing the comfort of her family, every one of us has had the happy experience, and evidences to the contrary from single instances of inefficiency cannot destroy the established and well attested fact of her ability. I think it proper, however, to repeat the comparison of a laborious and prudent woman with her opposite, which one of our first and most brilliant speakers has made. Besides being a classical writer he is an eminent jurist, and can speak of them from actual knowledge. Thus he says in speaking of the first: "In prosperity, man finds in her sweet company his joy increased by sharing it with her; in adversity, he finds loving consolation; in doubts, faithful counsel; in work, refreshment; in failure, assistance; in sickness, comfort; in his estates, she brings him prosperity — she cares for his children, she tempers his excesses; and finally, through good and bad, through the prime of manhood and in the weary days of old age, — yes, through the whole of life, she brings him sweet love, peace, and rest."

The second he characterizes with these sentences of inimitable scorn: "If from necessity she busies herself with her own affairs, she will still spend much of her time in meddling in the affairs of her neighbors, visiting from house to house, a gossip, a loiterer, frequenter of festivals, hating quietness, forgetful of her own house and curious of the house of her neighbor; inquisitive of what is going on and given to scandal; exciting disputes with all its necessary consequences, which we will not mention, they being both manifest and well understood. So that, in a word, we see that employment is necessary for woman, fitting her for positions of influence, usefulness, and trust."

But with all this work we would not preclude diversions, which, if suitable to the age and constitution, are of great benefit. They should not be accompanied by great pomp and display during the early years, for each time that children are allowed to visit these public displays and take part in them before their characters are formed, it exposes them to the cultivation of a taste for vanities and a love of excitement not healthy for their tender years.

Again let me say, severity, when necessary, is more effective when exercised by the mother. She who refuses a pleasure to her daughter in order to subdue her desires; she who hides the tears at the departure of her son, in order that she may not weaken his courage and determination, fulfills better her mission than she who, according to the dictates of human, yet elevated selfishness, gives way to all the extreme expressions of maternal love. Neither must these duties be so absorbing as to make her forgetful of the rest of the world; and above all to the duty she owes her husband; for it is not enough to find it, but she must manifest it, participating in his pleasures, his pains, his inclinations, and even in his studies.

The husband who, returning from Parliament, or from the Academy, in relating his triumphs to his wife, is met by complaints, perchance of his irregular hours which upset the order of their home life, will begin to accustom himself to live alone, at least in spirit. Racéne never pardoned his wife that she did not assist him in the representation of his tragedies. I have seen a woman who seemed to suffer the torments of real jealousy because her husband gave more attention to his books than to her. The union must be rounded out and complete, and, being thus, the moral influence of the wife will never be lost

POLITICAL INFLUENCE.

The desires to better the condition of woman have been promulgated in every land, by associations more or less effective according to the conditions and means used to unfold them. With the exception of the United States of America, where the women have taken the initiative, the impulse has been put forth by men in moments of revolutionary agitation in order to compromise her, but she has instinctively repelled these efforts. Notwithstanding this, in England there are societies to promote her education and provide for her suitable fields of labor. In nearly all the German cities I have visited institutions for young women where they can obtain a commercial education; and since 1865 there has existed in Berlin an institution for the unfolding of professional and industrial labor for women, and many other schools have been established for that purpose.

In Catholic countries the nuns, under the patronage of queens and highborn benevolent ladies, have for centuries made it an important part of their life-work to care for the needy of their own sex, helping them by means of important associations. France, nevertheless, wishing to be aided by official action, published various judicial reports concerning the condition of working women. The most important of them were of 1851 relative to 1847, and of 1864 relative to 1860 (both confined to Paris and immediate vicinity). In this interval neither was the field of labor of woman widened, nor her misery diminished; the number of workers was doubled, and in 1860 was 400,000; the number having steady work was 12,000, half of these being seamstresses; those engaged in the manufacture of artificial flowers alone increased from 5,000 to 7,000; but during the same time public assistance was supplied to unfortunate women numbering about 50,000, half of whom were young girls.

In Spain, where women have always been distinguished for the simplicity and modesty with which they practise all the virtues, it is impossible to enumerate all the private associations for charitable instruction in our towns. In regard to national institutions, it is enough to say that of the seven establishments of general benevolence under the care of the State, six are entirely under the care of women; and when this service was disorganized in 1868, imposing unnecessary obligations upon patrons improvised for the occasions, it should have been confided to ladies who would have performed the labor gratuitously. Then, perchance, we should not have been compelled to read in the *Guia Oficiale de España* that "the raid upon the riches gathered in the treasuries of our private charities can be compared only with the enormity of the depredations which, since the olden times, have come to waste their sacred patrimony."

All thoughts of true charity and patriotism find in our women enthusiastic aid, but it has to be kept within these two great ideas; because if another kind of direction has to be given it will not prosper. Neither the project of a feminine athenæum nor the Sunday conferences that were devoted to women in 1860 have attained greater results than some conventions in which discourses by distinguished orators were delivered. "The Association for the Education of Women," has not yet reached the success which its founders proposed, although they attained to found a normal school for lady teachers.

Another association called "The Central Protector of Women," which Liborio Acasta endeavored to found in 1876, did not succeed, although its author took all the pains necessary to tabulate the rules for its government.

It is evident that the souls of our lady companions are not, then, strangers to anything that agitates the world, and that neither can they be strangers to the politics of the world. Hence, having a right. like man, in the fatherland, she must exert her influence in it as she does in everything else, although I maintain that politics proper is not a suitable field for women.

I do not wish to speak of these gloomy Associations into which she is dragged by men, by means of her misery and ignorance. In an official memorial which Mr. Greard directed to the prefect of the Seine in 1876, is is affirmed that some work-women enter with enthusiasm into the ranks of the International because of their sufferings and of the decay of their religious ideas, yet these unhappy ones, as well as the Calceteras of the first French Revolution, the Vesubianas of 1848, those who formed the battalion in the last Commune, and the female Nihilists of Europe, are only, in my estimation, alarming symptoms of social disorder. In vain did the socialistic society of Marseilles decree in 1859 the absolute equality of the sexes and thus endeavor to drag woman into politics; in vain also are cited by writers like Emilio de Girardin examples more or less exact of the middle ages and instances of character in feudal times,

The first formal endeavor to obtain the formal vote of women by municipalities and districts is about to be made in Iceland in accordance with the advice of the Assembly or Althing, which is sanctioned by the King of Denmark. It must be borne in mind, however, that the territory in which the trial is to be made contains but 70,000 inhabitants.

Notwithstanding the fact that the English Parliament in 1851 declared, that whenever the laws mention man, the term woman is included, and must be thus interpreted, yet the proposition to grant the right of suffrage to widows and unmarried ladies, who as heads of establishments pay taxes, carried several times to Parliament, has never been able to obtain a third reading, although those who would be affected by this measure would not reach, it has been estimated, 200,000.

In the United States of America, a country of exceptional conditions, the movement is directed by themselves. They form associations, hold meetings, and edit newspapers, in order to obtain their so-called political rights, — as yet with very limited results. Miss Stanton could not make herself a successful candidate for delegate to Congress from Pennsylvania; Victoria Woodhull, who, from the presidency of the Association of Free Love, wished in vain to pass to that of the Republic; and not even has Mrs. Tenny been able to obtain the command of the Ninth Regiment of militia, although she has attempted to do so. Only have they been able to obtain, as in

Wisconsin, local suffrage; while in Wyoming they are eligible to take a place on a jury.

Wherever reformers or emancipators, after the style of Bandrillart and Valbert, Pelletan and Fourrier, and many others, endeavored to realize the purely theoretical state of Plato, public opinion has been carried by the satire of Aristophanes in the comedy, "Women in the Assembly of the People;" and this is certainly not the reason why we to day limit and compel them to the use of the distaff and loom, as Telemachus subjected his mother, according to the immortal poem.

It is not political emancipation that our women sought and have obtained in a great degree, but emancipation from ignorance, injustice, and vice; and it is in view of this last that the association which Mrs. Butler is extending over all Europe against houses of prostitution seems wise. Women have come to understand that they need neither the floor nor the platform in order to influence politics, for they know that public opinion is formed by the opinion of the individual, and that she is the daughter of the family. Experience, on the other hand, tells them that they have ever exerted an influence, and that this influence has been mighty and for good.

Love on the one hand, and fear on the other, conspire to beget and cultivate in woman's mind conservative ideas of government; and these conservative ideas are the daughters of love of the present order of things. They deplore change,—hence the greater part of revolutionary leaders fear women as checks to the progress of their undertakings; and almost all the worthy women who lived in France a century ago were enemies of the revolution and the guillotine.

Amongst ourselves this assertion is even more apparent than it is in the history of France. Only in the excitement of ideas awakened iu 1868 have we had anything but a shadow of female demagogism. On the other hand, those of us who still have faith in legitimate monarchy, because we know it to be the natural law of politics, and that every natural law must be realized, have found great help in woman in the realization of the legitimate restoration. From the time that a mother's abnegation made it possible for Spanish women to call Alphonso "ours," the restoration was accomplished; and from the time that the *flor de lis* became so prominent in his crest it may be said that even then it had become a part of the Nation's escutcheon. Alphonsian women were found everywhere where opinions were exchanged; she proselyted even in the government offices; let fall unmistakable phrases upon the ears of their husbands, even under the roof of government officials; and whenever an Alphonsine debate was announced as about to take place in Parliament they encouraged us by their presence without reference to merits of the orator. It is doubtless on this account that the most benighted sectarian of Spanish liberty, who proclaimed that the compact sacrifices the country, also affirmed (in the fourteenth conference relating to the education of women), that as a general rule, she is not republican, and, in accordance with a yet more general rule, she is always a Catholic.

Well it is for us that she is so, but she is something more,—she is susceptible to the greatest self-denial, and her magnanimous actions always have sacrifice as their foundation. When every one abandoned Louis XVI., Olimpia de Gouge endeavored to defend him at the tribunal of the Convention; they prevented her, and then she pronounced those words which will be an eternal memorial bearing witness to the injustice of that body by accusing them, with reason, of compelling a woman to ascend the scaffold on account of her political opinion, while they did not permit her to ascend the tribune for the defence of her king.

Spain is the country of heroines, but this is not the time for naming them; yet I cannot but declare that woman contributes greatly in inspiring love and a true conception of the fatherland, which are to stand the test of all reverses and deceptions; and they extend their influence to every sphere,—that of political economy included,—instinctively understanding that she will be the first to feel the sad effects of any disaster to her country. A great and patriotic act was passed in Spain in 1877,—an act which has produced such excellent results that the authorship of its idea has been earnestly contended for, and this idea sprung up two years before from the patriotism of a woman.

Thus do they exert their influence; hence it was possible for Aristotle to affirm, concerning the politics of his time, that in every political action women exercised a greater influence than men do in household affairs, and surely that the most effective and direct way of governing a country is doubtless to govern the governors.

But to add strength to my own feeble statement by a wiser and weightier witness, I will cite the great M. de Tocqueville, in his letter to Mme. Swetchine: "Nothing has attracted my attention so forcibly," says this writer, "in my experience in public life as the influence which women exert in it, so much the greater for its being indirect. They give a moral tone to every nation, which also manifests itself in politics; and I have seen, many times, men vacillating by nature still displaying unmistakable public virtues because of the women beside them sustaining them in their struggles,—not by advising bold actions only, but by exercising an inspiring influence, by showing her appreciation of a high ambition and of a great duty performed."

Tocqueville was right; and I will add, what mission so beautiful as that of woman! and we all have observed it. Briefly, then, no one knows as she, how to influence, and she does it nobly. Besides, she knows that the poll and the tribune are but *the arena* in political struggles; that in this struggle there is something cruel, unpitying, and tyrannical, which is repugnant to women. They know that the voting power can be exercised by delegation, and that there is no better delegate than the father, the husband, son, brother, and friend. Let us keep to ourselves the disagreeable features of politics, and keep them away from woman without rejecting her influences; and knowing that the aim of every government should be the rule of right, let us concede it to woman, without showing in the public square a struggle as of war, which appears at least like the contention of one-half of our life against the other half.

The Spanish woman asks not for material intervention in politics in order to obtain her judicial rights, for she blindly confides in our love and justice; but this same confidence obliges us to lay aside those principles of legislation that still savor of masculine egotism, at least, in order to take away from the apologists of crime the pretext that woman kills because of the deficiency of the law. How? let us see.

REFORM IN LEGISLATION.

Only the acknowledgment of right begets content and completely disarms the spirit of rebellion. What is wanting in order to the establishing equality of rights between man and woman in Spain in the penal, civil, and administrative legislation?

In civil rights that which still remains of *marital power* ought to be modified, at least in form and in name; for, in reality, it ought to be only *conjugal power*, and exercised by man with the advice of his companion, or by her when he makes himself incompetent to exercise it. as has been the case already with "*patria potesta.*"

Man must continue to administer in regard to the finances,—at least, in outside relations; but on that very account he will continue to be responsible for the well-being of the woman. "The profits of the marriage partnership" are just; but, besides, the legitimate conjugal now projected ought to be established, being superior even to the alimony and the marriage-portion of the ancients. We ought also to equalize the dowries of daughters and sons, since there is no sufficient reason for the difference.

When sworn faith is broken, penal and civil consequences ought to be the same for both sexes.

Right, morality, and Christian faith ask this reform; the just phrase of the Just One concerning the throwing of the first stone brought to a level the accusers and the accused; and human conscience has been so impressed by the beauty and truth of the example that Art has repeated it in hundreds of its pictures, and has produced the masterpieces of Tintoretto, Paul Veronese, Il Paduano, Lucas Corianach, Rembrandt, Metsu, and Pousin.

The continuance by an innocent husband of the administration of the property of the guilty woman, to whom he shall owe only subsistence, ought to disappear or be made reciprocal in order to be just, applying itself as well to the guilty husband of an innocent woman. Neither the age of twenty-three years, nor any other age, ought to deprive her of her rights against the seducer; nor ought the lack of such an age to exempt him from punishment. All this is due to woman from a civil point of view. But something has been guaranteed to her as a right, which cannot be permitted to remain and ought to disappear,—*i. e.*, the privilege of not being compelled to follow her husband from the kingdom. This is contrary to the nature of matrimony. They, themselves, by their love and devotion, have already annulled this law by disuse and refusing to avail themselves of it.

In administrative matters their opportunities should be enlarged, and their pay, according to their efficiency, be made equal to that of man for the same work; and we should not treat her with the injustice which we see exercised in regard to the pay of school-teachers, male and female. The woman ought also to participate in honorary distinctions. We should continue the example of previous governments in enrolling the name of one of the principal women of Spain in the list of the Order of Beneficence, and that of a celebrated French female artist in that of the Order of Isabel the Catholic.

Thus I have tried to interpret the mission of woman in the world, and to advocate for her equality of rights and a distribution of labor according to her various abilities. I have endeavored to show her natural means of influence through education and instruction realized in the fulfillment of her duties, or it may be in the observance of the conditions of her rational nature.

From all this I deduce that her moral influence is direct and decisive, especially in reference to the children, cultivating their reasoning faculties and awakening their consciences; and, although being indirect, her political influence is no less justifiable and powerful.

Such is my thought, such is the fruit of those meditations to which I have yielded myself through love to the half of our being, convinced that man, by his injustice and by lack of idealism in his passions, has converted often into a slave or a tyrant her who ought only to be his companion.

So the Gospel calls her, and the Gospel is the truth,—so has God given her to us.

For what reason?

The answer is not in the Gospel, but it is contained in its spirit, and has been pronounced by a great Christian poet,—

"In order that she may lead us to Heaven."

MARGARET FULLER (MARCHESA OSSOLI).

Margaret Fuller, whose portrait is the frontispiece of this number of EDUCATION, was born at Cambridgeport, near Boston, on the 23d of May, 1810. In an autobiographical sketch she speaks of her father as a "lawyer and a politician," the son of a country clergyman,—Harvard-bred both as to his college and his professional studies. Of her mother she writes that she was "one of those fair, flower-like natures which sometimes springs up even beside the most dusty highways of life, bound by one law with the blue sky, the dew, and the frolic of birds." Her father's life was full of arduous labors, and his love for her "sweet mother was the green spot on which he stood apart from the common places of a mere bread-winning and bread-bestowing existence." Margaret was a remarkable child and a phenomenal woman, as all critics will acknowledge who have read the charming biographies of her, written by James Freeman Clarke, Ralph Waldo Emerson, William Henry Channing, Thomas Wentworth Higginson, and Mrs. Julia Ward Howe. No person has ever had more fortunate biographers, each giving to the world strong personal impressions of her character and influence, accompanied with reminiscences from her life and writings of the deepest interest to those who contemplate the lives of famous American women.

Margaret was always fond of books, and the works of Shakespeare, Cervantes, and Moliére were her early favorites. Her girlhood was marked by precocity, mental and physical; and while living in Cambridge she passed for a much older person, and had a recognized place in society beyond her years; she was then only 13 years of age. At this point in her life her desire for growth and mental development was intense, and she sacrificed everything to this end but "manifest duty." Margaret's enthusiasm for art and art literature not only engrossed her brilliant youth, but followed her through life. She taught Latin and French in Mr. Alcott's famous school in Boston during one winter, and in 1837 was chosen to fill an important position in the Green Street School at Providence, R. I., and was rewarded by the love and reverence of her pupils. She was connected with this school for two years. In 1840 she became the editor of the *Dial*, a quarterly publication, which was regarded as the organ of the Transcendentalists, but it was published only four years, and copies of it are now quite rare. Later she bid farewell to Boston, and made an engagement to write for the *New York Tribune;* and Mr. Greeley says of her that she was "a most fearless and unselfish champion of *truth* and *human good,*—at all hazards ready to be their standard-bearer through danger and obloquy, and, if need be, their martyr." In 1844 her famous book, *Woman in the Nineteenth Century*, was published, most of which had already appeared in the

Dial. In August, 1846, she went to Europe, visiting Scotland and England, where she made the acquaintance of Wordsworth, De Quincy, Thomas Carlyle, and other of the leading masters in literature,—spending some time in Paris, where she met the distinguished persons in literary and art circles. In May, 1847, she went to Rome, where she resided during a period of great political agitation. She was a great admirer of Mazzini, regarding him as her "ideal patriot," "standing alone in Italy" "on a sunny height far above the stature of other men." During the memorable siege of Rome in 1849 she spent most of her time daily in the hospitals. She had been privately married to a young Italian nobleman,—Ossoli,—whose acquaintance she made in the spring of 1847, during her first visit in Rome Her married life was full of anxiety; her constnnt fear o harm for her husband and son during this stormy period of Italy's history was most absorbing.

The last months of her life in Italy were months of self-sacrifice; wounded soldiers and rude peasants knew her generous heart, and thought of her as "a mild saint and ministering angel." After some years spent in Italy, during a period when the grand struggle for freedom had been made and failed, she decided to return to her native land, where, she says in a letter written to her mother at Florence, May 14, 1850, "I will believe I shall be welcome with *my treasures,—my husband and my child.*" She sailed from Leghorn, May, 17, 1850, in a merchant-vessel, and, after a long and tedious passage, reached the coast of New Jersey in thick weather, July 18, 1850 The strong evening breeze became a gale, and the bark "Elizabeth" struck on Fire Island Beach at 4 o'clock, July 19. Margaret, her husband and child were all lost. The bodies of Margaret and her husband were never found. Angelo, her son's body, was recovered, and was first buried at Fire Island, but afterward his body was removed to Mount Auburn, where alone lies the only one of "her treasures" that ever reached her native land. The verdict of all who knew her well is, that she was worthy of the honor and the reverence due to the memory of one of America's most notable women.

FOREIGN NOTES.

ENGLAND.— *Over-pressure in Schools.*— The agitation of the subject of over-pressure in the English Board Schools continues. Under the influence of public opinion, as manifested in several large meetings, and the reiterated statements of medical men, Parliament and the School Boards have taken the matter into consideration. A special committee appointed by the London Board have addressed a memorial to the Education Department, praying that their lordships will discontinue the examinations in reading, writing, counting, needle-work, and knitting for infants until the completion of their fifth year, and that the code shall be so amended that the grants for "infants" may depend only on their aptness and intelligence in physical exercises, songs, and appropriate and varied kindergarten occupations. The needlework requirements for all grades are condemned with respect both to the quantity and quality of the work called for. Two voluminous reports on the subject of over-pressure have recently been issued by the Birmingham and Leeds School Boards. The Birmingham report is evidently intended to show that the code is not responsible for undue pressure, but the fact is not clearly established. The committee of the Leeds Board report that, so far as children are concerned, the inquiry has failed to substantiate in any form the charges of over-pressure in public elementary school-work. With reference to pupil-teachers and candidates, the committee call attention to the fact that, until the recent appointment of the Board medical officer, there has been no adequate medical examination or test of the physical fitness of this class of persons. The statistics of absence do not warrant the opinion that teachers suffer more from physical weakness than any other portion of the adult working population. It should be observed that the Leeds teachers are free from the strain of payment upon results, being paid for their service by fixed salaries.

Women at Oxford.—The vote of the Convocation of the University of Oxford, allowing women to enter for "certain honor-examinations" of the University, is a great triumph for the cause of woman's education.

Report of the Commission on Technical Education.—The long-looked for report of the Royal Commission on Technical Education is a remarkable volume, replete with information and practical suggestion. It presents a detailed account of the means of technical education upon the continent of Europe and in our own country, discusses the relation of general elementary instruction to the development of industrial aptitude, and sets forth a body of important and far-reaching conclusions. The Commissioners see no cause in their researches abroad and at home to advocate any radical change in the policy of their own country. They approve the lines upon which technical education is now proceeding in Great Britain, and recommend a more vigorous application of the principles adopted. Drawing and natural science ought, they maintain, to be indispensable subjects in elementary schools. Among specific subjects to be taught out of school hours they recommend the introduction of the use of tools for wood and iron-working. They advise that the facts and principles of agriculture be made obligatory in the upper standards of rural schools. They point out the need of more efficient instruction in science and art in the training colleges for teachers, and the importance of imparting a more practical character to the work of the Science and Art Department. The Commissioners lay great stress upon the advantages enjoyed by American workingmen in the universal diffusion of elementary instruction in this country.

The Department of Education in the International Health Exhibit is proving a great success. The most interesting display is reported to be that of Belgium.

There are upwards of eight hundred students in attendance at the classes of the Technical College, Bradford, England, which has been open about fifteen months. A movement has been started by the college authorities for the formation of a society of textile colorists to promote the study of the theory of dyeing, an art that has been much neglected in England.

PRUSSIA.—*Fortbildungschulen* (*Review Schools*).—The Prussian Minister of Public Instruction and Worship has recently issued a decree relative to the industrial review schools. On account of the great interest felt in these schools which enable mechanics and tradesmen to make up deficiencies, of which they have become aware in the prosecution of their business, the authorities are urged to develop already-existing schools, to organize new ones, and to call the attention of city authorities and societies to the provisions of the decree. It has been found necessary to reduce the original time, — viz., eight hours a week, — to six, most schools having found four or six hours a week the utmost practicable. The decree ordains that hereafter the instruction shall be confined to those subjects which most nearly concern the needs of small tradesmen and handicraftsmen,—namely, to German, arithmetic, and the elements of geometry and drawing. Persons engaged in trades that require little or no practical knowledge of drawing can omit that branch, — for all others, four hours a week are to be devoted to it whenever practicable. An extension of the course is ordered where the resources are sufficient. In this more extended course, mechanics and physics are to be added to the mathematical section; modeling is to be combined with free-hand and mechanical drawing, and special instruction is to be given in drawing for each branch of mechanical handicraft. For young persons desiring to enter commercial business, foreign languages and geography are added.

RUSSIA.—The journal of the Minister of Public Instruction publishes the following statistics of the University of Moscow for 1881: The number of scholars, which, at the beginning of the year, was 2,413, increased by January 1, 1882, to 2,430. As is usual in Russian universities, the faculty of medicine attracted the largest number,—viz., 1,397; the course in law was followed by 451 students; the faculty of physical science and mathematics had 131 students in the first section, and 254 in the second; 190 students were enrolled in the faculty of history and philology. The scholarships, fees remitted, etc., represent a total of 175,000 roubles (above $115,000), at the service of poor students in the University. The teaching force, professors, lecturers, etc., numbered 103 persons. The budget of the University appropriated by the crown was 475,994 roubles (about $313,000); of this sum 243,623 roubles went for salaries. The library numbered 177,276 volumes and 13,164 journals, papers, etc.

DENMARK.—*Manual Training*—The system of manual training established in Denmark by Adolf von Clauson-Kaas has recently been the subject of a report by a German commission. In 1866 von Clauson's method attracted attention in Copenhagen; he was made school-inspector of practical work, with authority to introduce his system into the city schools. In 1873 the General Danish Household Industry Society was formed at the capital, and became the center of smaller local societies throughout the kingdom. The course of instruction which von Clauson carries on in his own house in Copenhagen illustrates his scheme. The time-list shows eight hours' work a day for a course of six weeks, equally divided among the following: Weaving, carving, brush-making, bookbinding, joiner's work, and scroll-saw work. The commission observe that it is not clear how this series exhibits the progress from the easy to the difficult, from the simple to the complex, more than to another; nor does it appear that the program is closely adhered to. On the other hand, it is evident that an industrious student can learn the elements of different kinds of hand-work in the school in the short space of six weeks, particularly if he start with a degree of acquired skill in manipulation. With reference to introducing this work into ordinary schools comparatively little has been accomplished. The government has gone so far as to offer some aid to districts that should introduce the system, but few have accepted the offer. In the Danish household industrial schools, established under the auspices of the society previously mentioned, only simple scroll-saw work and wood-working are carried on. The schools of Copenhagen attempt more. It was the opinion of statesmen, whom the commissioners interrogated, that household industry was not likely to take root in the Danish schools.

SWITZERLAND.—The report of public education in Switzerland, prepared at the instance of the Government for the Zurich Exposition, is the most complete representation ever published. It covers the year 1881, and comprehends all classes of institutions from infant schools and kindergartens to the universities. Geneva is the only canton in which kindergartens have been made obligatory, but they have been established in others. In 1881 they enrolled 10,864 boys, 11,242 girls. The primary schools numbered 4,385, with an enrollment of 434,080,—viz., 218,191 boys and 215,889 girls. The number of primary teachers was 8,365, of whom 6,974 had been trained in normal schools. The salaries of masters range from 1,400 fr. to 3,000 fr., and of mistresses from 342 fr. to 1,800 fr. Needlework has been introduced in these schools in a few cantons. As in our own country, the term 'secondary' is applied to schools differing greatly in courses and standards. They are divided into two classes, distinguished by the presence or absence of Latin in the course. They were attended by 20,131 scholars,—boys, 11,155; girls, 8,976.

There are 30 normal schools,—19 for men, and 11 for women. The age of admission is about the same for both sexes, averaging 15 years. The normal course is three or four years in duration. Above these schools rank the gymnasia, real schools, and superior schools for girls, having in all an attendance of about 11,585 youth of both sexes.

The superior institutions consist of two academies and four universities. The academy at Lausanne adds to the gymnasium course special courses of theology, law, medicine, letters, pharmacy, science, and technic. The teaching force consists of 26 ordinary professors, 18 extraordinary, 2 honorary professors, and 5 assistants. In the winter term the attendance averages about 300. The Academy of Neufchatel includes courses in theology, law, science, and letters. The teaching force consists of 25 ordinary professors, 3 extraordinary, 4 honorary, 2 "privat docenten," and 2 assistants. The attendance upon the four universities in 1881 was upward of 1,600 students. In the superior institutions must also be included the school of theology at Lucerne, school of law at Friburg, veterinary schoo at Zurich, and the school of theology at Croire, with an attendance at all of about 2,800 students, of whom 104 were women.

March 18, 1884, a subsidy was voted by the General Government to "professional" institutions, provided the instruction given in them is not allowed to become too general. The institutions included are indusl trial museums, professional "Fort-bildungs schules," schools of arts and trades, and those for artisans. An annual sum of 150,000 francs is to be accredited, that may be increased if circumstances admit.

NORWAY.—*Women at the University.*—The cause of women's education has also received a new impulse in Norway. The Norwegian University at Christiana has allowed women to attend its lectures for two years past, and it has now obtained permission from the Odelsthing to place women students on the same footing with men so far as examinations and scholarships are concerned.

Manual Training in Several Countries.—New movements in respect to industrial training are continually reported from Germany. An eight-weeks' course of manual training was opened for teachers in Weimar soon after Easter. The course is free to teachers, as the Thuringian authorities intend to pay the costs.

The authorities of Saxony have decided to appoint an inspector, who is to examine into the condition of affairs in the thirty lace-work schools, six ship schools, and ninety-three industrial review schools, of that State. The committee of manual training at Leipsic has decided to have a summer-vacation course in training of the hand for those who desire to become teachers of manual work.

AUSTRIA.—The end of 1883 marked the close of the first decade since the reorganization of the industrial schools in Austria. The statistics show the development that has been accomplished during that t me. In 1872–73 there were 87 industrial schools of all kinds in the empire; in 1883 the number had increased to 345. The attendance increased during the same time from 11,600 to 37,754. The subject of manual training was discussed on the presentation of the annual budget for public instruction. One member objected that there was too much dilletanteism in this kind of training as at present conducted. He desired that the Government should take up the matter, and see that more solid, steady work resulted. It was suggested that the Minister of Public Instruction should examine as to the feasibility of introducing manual training into normal schools. Objection was taken to the present training on the ground that it ran too much to *papier-maché* making and fret-carving.

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